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Volume I

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1. Imports Under a Foreign Exchange Constraint

Cristian Moran

To estimate how adjustment packages will affect the flow of imports, policymakers need to look beyond the traditional explanatory variables of GDP and real import prices. They must focus in addition on the availability of foreign exchange.

The traditional model of import behavior — which looks only at GDP and real import prices as explanatory variables — failed to predict or explain the developing countries' import slumps in the early 1980s. It works well for industrial countries, unconstrained by foreign exchange. But it does not work well for the typical developing country, short of foreign exchange.

Hence, the search for a better model — a model more useful for developing country policy analysis. Hemphill introduced the availability of foreign exchange, measured by international reserves and foreign capital inflows, as a lone set of explanatory variables. This paper goes a step further and adds the traditional variables, prices and GDP, to international reserves and foreign capital inflows. The four variables together do a better job of predicting import responses — better than each of the two individually.

So, when putting an adjustment package in place, policymakers need to estimate how the availability of foreign exchange will affect the flow of imports. The focus is important because the policies that affect the availability of foreign exchange range more broadly than do policies affecting aggregate demand (contractionary fiscal and monetary policies and exchange rate policies). In addition to actions influencing aggregate demand and prices, the broader policies include those:

- To increase the export supply response.
- To keep international markets open to developing countries (that is, to reverse protection in industrial countries).
- To increase capital inflows, both official and private.

In sum: policy makers must look at the policies that affect GDP **and** prices **and** the availability of foreign exchange when trying to estimate import behavior in developing countries.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Carmen Hambidge, room N8-069, extension 61539.

2. Issues in Adjustment Lending

Vinod Thomas

Three major issues have emerged from adjustment lending. One is translating adjustment policies into improved economic performance. The second is reconciling policy reforms with changing external conditions. The third is coordinating the adjustment process itself — coordinating the efforts of all the interested parties, inside and outside the country. In relation to each of these issues, expanding the menu of policy options could make adjustment packages more credible and effective.

Reaping the full benefit of adjustment packages depends on a government's commitment to reform as well as a variety of complementary factors, many of which have not been duly considered because of the lack of time, resources, and skills.

Most policy packages have focused on adjustment in the following areas: (1) fiscal and investment policy, (2) exchange rate and trade reform, (3) industrial regulation, (4) agricultural pricing, (5) financial liberalization, and (6) institutional development. No small task. Meanwhile, concerns have been voiced that too much is being attempted — or, where sociopolitical issues are ignored, too little.

It is becoming increasingly clear that if these packages are to be more effective and credible, the menu of policy options might be expanded in three areas. One is translating adjustment policies into improved economic performance — the objective of domestic strategy. The second is reconciling policy reforms with changing external conditions to get the most from the external strategy. The third is improving the process of adjustment itself. So, an already onerous set of tasks has to become even broader — or, better, more focused.

Linking policies to performance. Although the links among policy change, funding, and economic returns might seem clear, identifying them in practice is complex. Efforts to clarify the expected effects of policy on performance should continue. There nevertheless are practical difficulties, some of them unpredictable. A country's policies may improve, but the financing to carry them out may be inadequate. Also influencing the effectiveness of reforms are their credibility and sustainability — as well as an array of complementary policies and nonprice considerations.

Getting the most from the external strategy. Much of the Bank's intellectual and financial effort has supported an outward orientation and market liberalization. But confusion remains over what these changes really mean, about what is really being sought, and about how much is being reformed. Needed now is a clearer understanding of the respective roles of domestic policy and external factors in increasing trade and accelerating growth.

Improving the adjustment process. Preparedness for the reforms has been important for their implementation and sustainability. Timely financing for the adjustment package has also been a key to acceptability. Building a domestic consensus, essential to sustaining stabilization and adjustment efforts, requires commitment and the ability to experiment. Providing adequate finance requires coordinated rather than fragmented efforts by donors, commercial lenders, and the respective governments.

In sum: more attention needs to be placed on the commitment to price reforms and on nonprice areas. Support might also increase for the outward orientation of countries — if discussions are extended to consider external factors and if nondistortionary ways of promoting domestic production are explored. In addition, governments must do more to build a consensus for the reforms — and the external financing community must increase its flexibility in supporting those same reforms.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Carmen Hambidge, room N8-069, extension 61539.

3. CGE Models for the Analysis of Trade Policy in Developing Countries

Jaime de Melo

Simulation models with strong microeconomic underpinnings are being used increasingly in quantifying the implications of alternative trade policy scenarios in developing countries. Presented here are seven models whose modifications enable useful applications to trade policy and external balances, and to growth.

The use of computable general equilibrium (CGE) simulation models for policy analysis has become widespread. In the industrial countries they have generally had a microeconomic focus because economywide policy analysis can rely instead on econometric techniques. But such techniques are not well suited to economywide analysis in developing countries, for three reasons: (1) the lack of time series data, (2) the need to remove inconsistencies from data that are available, and (3) the short time that big changes in policy leave for testing hypothesis. So, simulation models relying on "borrowed" parameter estimates have been used for a wider range of applications in developing countries.

This survey starts with a presentation of the core structure of simulation models for trade policy analysis. It shows that a few share parameters and elasticities, leading to a four-way sectoral classification: exportables, importables, nontradables, and import-dependent sectors. The rest of the survey deals with a range of applications derived from this core model.

Applications to trade policy

Three of the models are modifications of static one-period models:

- *Model 1.* Measuring the costs of protection in a regime of quantitative restrictions characterized by rent-seeking.
- *Model 2.* Measuring the costs of protection when there are economies of scale in some sectors and a restrictive trade policy impedes entry by new firms and allows incumbents to price above average cost.
- *Model 3.* Designing optimal trade policies when budgetary revenue is constrained and fiscal authorities cannot resort to direct taxation because of a weak fiscal system.

Applications to internal and external balances

Three others are modifications of dynamic models that treat intertemporal linkages recursively:

- *Model 4.* Decomposing the causes of a balance-of-payments crisis and comparing the results with purchasing power parity calculations.
- *Model 5.* Determining what an exchange rate in temporary disequilibrium means for the current account.
- *Model 6.* Determining what alternative foreign trade strategies might mean for long-run growth.

Applications to intertemporal issues

The seventh model is a modification that goes beyond intertemporally decomposable growth paths to show the determinants of intertemporal substitution in a two-period, two-sector dependent economy.

- *Model 7.* Determining the optimal borrowing strategy for a country that faces external borrowing constraints linked to its fiscal position.

These economywide simulation models are good tools for quantifying the tradeoffs in policy packages that the Bank discusses with its clients. Future modeling exercises would nevertheless benefit from direct econometric estimates rather than "borrowed" parameter estimates.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Carmen Hambidge, room N8-069, extension 61539.

4. Inflationary Rigidities and Stabilization Policies

Miguel A. Kiguel and Nissan Liviatan

A tight fiscal stance can stop episodes of hyperinflation. But it cannot, on its own, overcome the inertia of rising prices in countries suffering chronic inflation. Such countries can nevertheless strengthen their stabilization efforts by anchoring nominal prices to the money supply or the exchange rate.

Orthodox stabilization policies — those based on a tight fiscal stance — are very effective to stop hyperinflation, as in Bolivia in 1985. Wage and price inertia are eliminated through the process of hyperinflation, while the unsustainability of the process makes a serious stabilization program credible.

The orthodox approach has been less successful in chronic inflation countries. We distinguish three types of orthodox stabilization programs all of which include a tight fiscal stance. The first one is based primarily on the fiscal adjustment, as was the case in Brazil and Mexico in the early 1980s. We argue that this approach is ineffective in dealing with inflation, especially when undertaken in the midst of a balance of payments crisis. The second type includes a money crunch (as in Chile and Argentina in the mid-1970s), and the third uses the exchange rate as the main nominal anchor (as in the "Tablitas").

Disinflation during these experiences has at best been slow, and in some cases inflation accelerated during the stabilization programs. Price inertia, and lack of credibility created insurmountable difficulties that led in many cases to the abandonment of the program.

Persistence and discipline, however, can make the orthodox approach succeed. The Chilean experience is useful in this respect. More than a decade of fiscal restraint, and a consistent use of different nominal anchors eventually achieve stable low inflation. There were also the drawbacks of low average growth and severe crisis along the way. We conclude arguing that "heterodox" programs might provide a suitable alternative.

This paper is a product of the Debt and Macroeconomic Adjustment Division, Country Economics Department. Please contact Miguel A. Kiguel, room N11-059, extension 61761.

5. Comparisons of Real Output in Manufacturing

Angus Maddison and Bart van Ark

International comparisons of real output and productivity should rely not on official exchange rates but on standardized valuations of the different elements of output.

The most direct way of comparing output in different countries is to use the official exchange rate to convert GDP in one country's price into the price of another country — and in multicountry comparisons to convert it into a common currency, such as the U.S. dollar. But exchange rates mainly indicate the purchasing power of currencies over tradables, not the average purchasing power of currencies over all goods and services. And even for tradables, the use of exchange rates is problematic because of currency fluctuations and capital movements.

With the measurement of comparative real output across countries intertwined with assessments of purchasing power, the question becomes: what is the best way to make those assessments. Most purchasing power parities have been developed for the components of final demand — for consumption, investment, and so on. This expenditure approach is useful for looking at an entire economy but it cannot be used directly for analyzing individual sectors because it does not show real product by industry.

The production approach used here looks at the industry of origin — and provides a basis for growth accounting, comparative structural anaylsis, studies of technological performance, and work on labor productivity and total factor productivity.

The method essentially takes the value of output in national prices and uses unit values from census data to standardize ouput uniformly and consistently. So, rather than use a common conversion factor (the exchange rate) it uses a standardized basis of valuation.

Applied to the manufacturing sectors of Brazil, Mexico, and the United States, the revaluation of output in national and U.S. prices provides a sounder basis for constructing relative indicators of productivity. It also reveals much about trade protection policies and their incidence on different sectors of the economy.

The approach shows, in addition, which data are anomalous and which analytically useful in industrial censes. It thus provides important lessons for the development of the Bank's data base — on how to increase its reliability and improve its relavance to operations. It also shows how new insights might be gained by exploiting some official sources which, though rich in detail, often remain untapped by international agencies.

This paper is a product of the Socioeconomic Data Division, International Economics Department. Please contact Estela Zamora, room F7-136, extension 33706.

6. Farm-Nonfarm Linkages in Rural Sub-Saharan Africa

Steven Haggblade, Peter B. Hazell, and James Brown

The links between agricultural growth and the rural nonfarm economy, known to be strong in Asia, are weaker in Africa but still important to the rural poor. Crucial for strengthening these links are policies and investments that (1) promote smallholders, (2) improve rural infrastructure, (3) encourage commerce and services, (4) foster the development of rural towns, and (5) explicitly recognize women as key actors in rural development.

Agricultural growth stimulates the rural nonfarm economy through a variety of links — some operating through production relations, others through production relations, others through consumer spending patterns. In Asia these links are strong: a $1 increase in agricultural incomes will generate about 80 cents in additional rural income, mainly among suppliers of rural nonfarm goods and services. In Sub-Saharan Africa, however, these links are much weaker: a $1 increase in agricultural income will generate only about 50 cents of additional rural income.

One reason for these weaker links in Sub-Saharan Africa is that there is less irrigation, which creates jobs in construction and maintenance. Another is the lower population density, increasing the distances to markets and diminishing the competitiveness of remote producers. A third is the pattern of household consumption, with less diversity in both food and nonfood consumption. Government policies and poor infrastructure also put brakes on the nonfarm economy.

Demand clearly is the main constraint on the rural nonfarm economy. So the first task is to get agriculture going — in short, to bring faster agricultural growth to Sub-Saharan Africa. The focus should be on small-scale farming, because of its many links to the rural nonfarm economy. the second task is to be ready when it comes. Here are some key considerations for policy formulation and future research:

- Investment codes and related laws that discriminate against small, rural firms have to be redressed.
- The focus on small-scale, rural manufactiring has to be redirected to include services, which are among the fastest growing rural nonfarm activities.
- Rural towns, crucial for the development of the rural nonfarm economy, have to be assured of adequate economic and institutional infrastructure, especially ground transport, comunications, and efficient credit and labor markets.
- Investments in rural roads and transport systems have to be adequate to ensure that viallagers have easy access to rural towns.
- Investments in people's skills have to accompany the investments in infrastructure to develop all types of rural businesses.
- Direct assistance to rural nonfarm enterprises — such as credit projects, especially those for working capital — can be much more cost effective than technical assistance and projects providing modern workshop facilities.
- Because women will be the key actors in the transformation of Africa's rurla economy — in trading, in processing and preparing food, and in many other services — governments and assistance agencies must explicitely recognize this role and ensure that credit schemes are open to women as well as men.

This paper is a product of the Agricultural Policies Division, Agriculture and Rural Development Department. Please contact Cecily Spooner, room J2-084, extension 37570.

7. Institutional Aspects of Credit Cooperatives

Avishay Braverman and J. Luis Guasch

If credit cooperatives are to be viable and help farmers, particularly small-scale farmers, they must pay more attention to the design of their operations — to the accountability of managers, to the structuring of incentives, and to the monitoring and enforcement of repayments.

Few farmers have obtained credit from formal sources — this, despite the remarkable expansion of credit throughout the rural areas of developing countries over the last three decades. Small-scale farmers have fared the worst, having been largely screened out of formal credit. The obstacles they face include higher transaction costs, greater perceived risks, and patronizing lenders.

To overcome these obstacles, small-scale farmers have formed organized credit groups and cooperatives. But such endeavors have failed more often than they have succeeded.

The high failure rate of these organizations is of concern for two reasons. They command a large amount of resources. And they are important in the economic development of rural ares, particularly in improving the plight of small-scale farmers.

Because the proper design of these organizations considerably increses their likelihood of success, policies to promote appropriate designs could be much more effective than mere subsidies, the predominant policy instrument so far.

More specifically, the focus of such policies should be on the optimal nature and scope of joint-liability arrangements, on the gathering and use of information in setting incentives, and on the rigidity of enforcement rules.

This paper is a product of the Agricultural Policies Division, Agriculture and Rural Development Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Cecily Spooner, room J2-084, extension 37570. The paper will also appear in Pranab Bardhan (ed.), *Economic Theory for Agrarian Institutions,* Oxford University Press (forthcoming).

8. Prospects for Equitable Growth in Rural Sub-Saharan Africa

Steven Haggblade and Peter B. Hazell

The prospects for equitable growth in African agriculture are good as long as governments monitor land rights, upgrade rural infrastructure, foster farm-nonfarm linkages, and focus agricultural research on crops and technologies important to smallholders.

Improving agricultural technology in Africa has been difficult because of the continent's fragile soils, its patchwork of climates, its poor potential for widespread irrigation, and its weak institutions and infrastructure. So, when advances do occur, they are likely to be limited to specific zones, worsening the regional inequalities and in and between countries.

What, then, are the prospects for equitable agricultural growth in regions that benefit from new technological advances? They are good for several reasons. The distribution of land is no worse in Africa today, and the distribution of income is better, than in Asia before the green revolution. Moreover, there are few landless people in Africa. In addition, the technical packages in the field and the pipelines are scale-neutral, giving no edge to large farms over small ones. For example, improved seeds are suitable for small-scale applications, as are changes in cultivation that conserve moisture. And Africa's social institutions support people with a safety net and, through extended families, redistribute income gains — while non farm activities often provide an important source of income for the poor.

Equitable growth, though possible, is not assured, however. Several research and policy initiatives will be needed to capitalize on the potential

- Research must continue to focus on technologies appropriate for small farms and on crops, especially food crops, important to the poor.
- Policymakers must no longer restrict assistance to two categories of nonfarm activity that are particularly important for equitable rural growth — service enterprises and nonfarm activities of women.
- Rural infrastructure has to be upgraded to permit the widespread dissemination of technical advances and to enable the nonfarm sector to benefit from the increased demand emanating from rising agricultural consumption and production.
- Governments will need to monitor land tenure and tenancy to ensure that landlords and large farms do not monopolize the fruits of technological advance.

This paper is a product of the Agricultural Policies Division, Agriculture and Rural Development Department. Please contact Cecily Spooner, room J2-084, extension 37570.

9. Can We Return to Rapid Growth?

Andrea Boltho

Probably not, for the likelihood of spontaneous market forces favoring private investment is slim. A more promising route for returning to rapid growth in the industrial countries is to rely primarily on a government-led expansion to promote investment — something possible only with an unusual degree of international cooperation.

The projections for economic growth in the industrial countries during 1985-95 have been revised steadily downward — to a pessimistic 2.5 percent a year. Can this trend be reversed?

The crucial element in achieving high growth rates is a rising rate of investment, itself a reflection of confidence in the economy. The conditions that stimulate higher investment can result from spontaneous market developments or from sharp changes in economic policy.

Chances that the former will occur, while slim, depend on putting in place policies that favor a surge in investment-led growth. These include reducing government deficits and promoting technological innovation and entrepreneurial activities, particularly by small firms. Maintaining low inflation rates and strong demand are equally important. Despite the existence of many of these conditions for some time, growth has slowed even further.

Expansionary government policies may be a more plausible route, although the pace is crucial. Too rapid an advance could propel inflation; a slower strategy could be too diffuse to overcome the present downturn. Opting for bold efforts is probably more promising, although even here policymakers face skepticism that independent government policies can work in today's interdependent global markets.

One possible solution is to strive for inter-national policymaking and to regain some degree of exchange-rate stability. This kind of international coordination could be the impulse for rapid growth, as it was after the Second World War.

This paper is a product of the International Economic Analysis Division, International Economics Department. Please contact Joseph Israel, room S12-007, extension 31285.

10. Optimal Export Taxes for Exporters of Perennial Crops

Mudassar Imran and Ron Duncan

Governments relying heavily on export taxes for revenue tend to tax commodity exports more heavily, which is consistent with short-run elasticities of demand and supply. But this makes them more susceptible to losing their market share over the long run.

Since the estimate of the optimal export tax is based on the price elasticity of demand and the price response of the commodity from other sources, should policymakers look at short- or long-term elasticities? The difference is crucial, especially where there is a large gap between the two. Governments weighing the optimal export tax have a choice — accepting lower tax revenues now and reaping higher revenues in the future, or setting their sights on high short-term tax revenues and losing out in the long run.

A comparison of the estimated optimal export tax rates for major developing country producers of cocoa, coffee, tea, and rubber with current tax rates shows the following. When the government depends heavily on the tax for its revenue, it taxes on the basis of the short-run elasticities. This tax rate is much higher than if the long-run elasticities were used, which is usually the case when the taxes are a small proportion of government revenues. But the higher tax rate makes the country susceptible to the loss of market share over time because it reduces the incentive for its own producers (while raising world prices) and encourages the substitution of other commodities by other producers.

Actual export tax rates applied by Cameroon and Nigeria on cocoa and by Sri Lanka on natural rubber were much higher than the optimal rate even when based on short-run elasticity estimates and may well have contributed to reductions in their world market shares.

Recent reductions in export taxes by dominant rubber exporters appear to have exerted downward pressure on world prices, which is consistent with theory.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Audrey Kitson-Walters, room S7-053, extension 33712.

11. The Selection and Use of Pesticides in Bank Financed Public Health Projects

Norman Gratz and Bernhard Liese

Where there is no alternative to chemical pesticides, they should be used with environmental and biological methods to cut costs, reduce contamination, and lower the possibility of resistance to the pesticide.

Three methods are available for controlling vector-borne tropical diseases — environmental, biological, and chemical. Environmental control to permanently alter the conditions that allow vectors to breed and develop is the preferred method, but it is not always feasible. Biological control is species-specific and may only be effective under narrow ecological circumstances.

For control of most diseases, therefore, pesticides are the only alternative. Whenever possible, these chemicals should be used along with environmental or biological methods and the appropriate drug or vaccine. This will cut costs, reduce contamination from pesticides, and lower the possibility of resistance to the pesticide.

Public health officials must be concerned that the compound chosen is safe for the user as well as for inhabitants and domestic animals in the treated area. The method of control must be appropriate for each targeted vector, because there are wide biological differences among species.

Some further considerations in the selection of a pesticide for a public health program to control a particular vector of disease are:

- The chemical must be a narrow spectrum pesticide
- It should be effective in the proposed geographic area
- The target vector should be evaluated to determine if it is resistant to a given chemical
- The proposed pesticide must not pose a hazard to species that are not targeted.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department.Please contact Carol Knorr, room S6-137, extension 33611.

12. Teacher-NonTeacher Pay Differences in Côte d'Ivoire

Andre Komenan and Christiaan Grootaert

Although teachers in Côte d'Ivoire receive a rent component in their base salaries, it does not put them ahead of nonteachers, who are likely to receive better in-kind benefits, bonuses, and commissions in addition to their salaries.

Because base salaries for teachers in Côte d'Ivoire are higher than wages of workers in other occupations, there is some question about whether teachers are overpaid. But other workers widely receive benefits, bonuses, and commissions and earn the same as teachers. Even allowing for higher educational requirements, different types of teachers, and longer vacations, teachers are not better paid than employees in other fields.

Moreover, while salaries for teachers and other workers having similar educational backgrounds in Côte d'Ivoire are almost the same, nonteachers earn twice as much as teachers having similar lengths of service.

Policymakers should thus be cautious when considering budget cuts that would lower teachers' salaries, cuts certain to make the teaching profession less attractive.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Rita Vartamian, room J6-011, extension 34678.

13. Objectives and Methods of a World Health Survey

Trudy Harpham and Ian Timaeus

Designing and administering a world health survey will not be easy, but one of the gains from such a survey could be an improvement in the methods governments use to conduct and analyse health studies.

Many developing countries are trying to improve the routine collection of health information by strengthening surveys, censuses, and registration systems. At the international level, too, efforts are under way to provide information on health and health interventions, including statistical reporting programs of the U.N. and the World Bank.

In view of the limited financial resources in the developing countries, would a world health survey complement these health information systems and contribute to long-term health care? Is it reasonable to expect that such a survey could identify the patterns and causes of disease and at the same time measure the effectiveness of investments in health?

Although a series of coordinated country health studies could be valuable, there are many tradeoffs. Considering the variety of health problems and priorities in developing countries, it is probably more important to develop the expertise to conduct and analyze health studies than to devise a standard questionnaire to collect health data. As for the cost-effectiveness of health programs, a world health survey is not the appropriate vehicle for such evaluations, but it can address such concerns as access, coverage, patient costs, and financing systems.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Anelia Menciano, room S6278, extension 33612.

14. The Optimal Currency Composition of External Debt

Stijn Claessens

By choosing the appropriate currency composition of their external debts, developing countries can reduce the exposures associated with exchange rates, interest rate, and commodity price uncertainties.

The increased volatility of exchange rates, interest rates, and goods prices has focused fresh attention on the importance for developing countries of reducing their risks in these markets. These countries generally cannot use such conventional hedging instruments as currency and commodity futures because of a variety of institutional and other constraints. But they can use the currency composition of their external debt to hedge against exchange rates and commodity prices.

The optimal currency composition of their foreign debt portfolios depends on the following factors:

- Domestic production structures.
- The shares of spending on different goods by consumers.
- The relationship between prices for domestic goods and exchange rates.
- The costs and risks of borrowing in foreign currencies.
- The effects of exchange rates on expected receipts and payments in foreign currencies.

What if a country only wants to hedge itself against the impact of commodity price and exchange rate movements and does not want to speculate on relative exchange rate movements? Its optimal currency composition will then hinge on the covariances between commodity prices and exchange rates, the covariances between exchange rates, and expected net foreign currency receipts.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Sook Bertelsmeier, room S9-040, extension 33768.

15. Stimulating Agricultural Growth and Rural Development in Sub-Saharan Africa

Vijay S. Vyas and Dennis Casley

Restoring agricultural growth in Africa will require new production technologies appropriate for different farming systems. It will also require eliminating government policies that discriminate against farmers.

Economic growth in Sub-Saharan Africa depends on reversing the region's deterioration in agricultural performance — a reversal that is crucial both for meeting domestic consumption needs and for generating foreign exchange earnings through exports. But efforts to restore agricultural growth are hampered by the ecology of the region, undermined by policies that jeopardize agricultural and rural development, and complicated by sluggish global economic growth as well as agricultural policies in industrial countries.

Given the region's necessary transition from a land-extensive to a land-intensive farming system, attempts to improve agricultural production and to lay the groundwork for sustained rural development will depend on the correct choice of policies. In making these choices, policymakers must consider some important changes in African agriculture:

- Changes in farming systems — from slash- and-burn to multiple-cropping,
- Changes in land rights — from collective ownership to contractual arrangements,
- Changes in institutions — as more formal credit and marketing services become available.

Equally crucial to Africa's agricultural development will be parallel efforts to remove policy barriers that have undercut agricultural production or hurt agricultural productivity. These barriers include high taxes, price controls, unfavorable exchange rates, and inefficient parastatal marketing boards.

In addition to policy reform, long-term improvement in African agriculture will require developing and extending new production tech-nologies. It will also require creating institutional structures to strengthen national research capabilities, and designing policies and investment strategies to improve the links between the farm and nonfarm sectors in rural areas.

This paper is a product of the Agriculture and Rural Development Department. Please contact Hilda Vallanasco, room J2-262, extension 37591.

16. Antidumping Laws and Developing Countries

Patrick Messerlin

Antidumping laws can be a back door to protection, jeopardizing trade liberalization in developing countries.

Current GATT-consistent antidumping laws have a strong protectionist drift and a pro-cartel bias. They endanger the very edifice of the international trade system based on GATT rules.

LDCs and NICs are deeply involved in antidumping actions, both as defendants and as prosecutors. Their exports represent 50 to 60 percent of the new cases investigated by the United States and the European Community. They are hurt not only by antidumping actions initiated by other countries but by their own antidumping laws, which may jeopardize their trade liberalization programs.

LDC and NIC involvement in antidumping matters will be a long-term phenomenon, as it is not related to short-term macroeconomic variations. In the Uruguay Round, LDCs and NICs should play an active role in reforming GATT rules to reduce the GATT bias in favor of "injured industries" that compete for imports and to make GATT rules conform more to their ongoing trade liberalization programs.

Why avoid antidumping actions?

• Three years after investigations were initiated, antidumping measures reduced import quantities by 40 percent.

• The measures taken are severe, increasing values roughly 23 percent, on top of other protection. They also encourage price-fixing agreements — and create a trade diversion, particularly for LDC and NIC exports.

• Rents accruing to foreign firms because of antidumping protection are substantial for industrial countries, less important for LDCs, and almost nil for NICs. The costs for foreign exporters are the net result of losses in export quantities and the gains in rents received on the remaining exports (a net loss of roughly 17 percent of initial export values for LDCs and 25 percent for NICs).

This paper is a product of the International Trade Division, International Economics Department. Please contact Salome Torrijos, room S8-033, extension 33709.

17. Economic Development and the Debt Crisis

Stanley Fischer

Debtors and creditors, including the international institutions, should work toward longer-term adjustment plans that ensure debtor countries of adequate resource flows over several years and that lead to needed policy changes during the period of adjustment.

The prolonged debt crisis of those highly indebted countries whose debts are owed primarily to the commercial banks has resisted all the creative financial engineering efforts of the last few years.

The Baker initiative, which built on increased lending flows from the commercial banks and multilateral institutions, has produced only fitful growth. And new financing arrangements have made only a small dent in the debt problem. As for more ambitious schemes, such as an international debt facility, there is little prospect that governments or commercial banks will accept the losses such a facility would recognize.

Thus it is more likely that the current country-by-country approach will evolve — with the introduction of some new assets and perhaps the development of debt conversion techniques in conjunction with long-term adjustment programs. The banks, too, might be willing to grant debt relief if it is associated with a change in economic policy in the debtor country or with guarantees of some type. For some countries, both creditors and debtors might prefer interest rate reductions to write-downs of the debt.

Fundamental policy changes in the debtor countries have been slow in coming. Reforms will be more likely if the debtor nations can be sure that financing will continue over several years. The benefit of such an approach is that it moves toward a longer-term solution to the debt crisis, enabling governments to concentrate on domestic economic management rather than debt negotiations. Because the debt crisis dominates policymaking in these countries, a shift toward longer-term development would itself contribute to growth.

This paper is a product of the office of the Vice President, Development Economics. Please contact Cliff Papik, room S9-040, extension 33396.

18. China's Vocational and Technical Training

Harold Noah and John Middleton

China is reforming its vocational and technical education and training to meet the skilled labor requirements of a changing economy.

To attain the number of skilled and semiskilled workers needed for its projected development, China must give higher priority to vocational and technical training and education.

Enterprises are being asked to implement a policy of "training before employment." Rather than hire and train unskilled workers assigned to them by government labor bureaus (the previous system), managers are now expected to require appropriate training credentials of new employees.

Until now, vocational and technical education has regularly been underfunded by government and provided by enterprises. This tradition of enterprise-based training reflects a link between training and industry that many industrial nations are only now trying to establish. But this training has generally been inefficient, overspecialized, and far too time-consuming for what it accomplished.

Authorities in Beijing are encouraging provincial, county, and municipal authorities to attain 50 percent enrollment in secondary schools of general education and 50 percent (greatly increased) enrollment in vocational and technical schools — to support the goal of expanding the service sector and self-employment. The overall pattern will be to strengthen the free-standing secondary technical and vocational schools; to introduce vocational programs in the general education high schools; and to develop enterprise-based skilled workers schools.

The core system of lifetime employment is to be replaced by a system of contract labor, permitting managers to hire workers for fixed periods and allowing workers limited latitude for negotiating compensation and terms of employment in return for surrendering tenure. (The old system of low, nationally determined wage scales remains in place; whether and how a system of bonuses will be used to improve worker-manager incentives remains to be seen.)

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Workie Ketema, room S6-228, extension 33651.

19. Côte d'Ivoire's Vocational and Technical Education

Christiaan Grootaert

Formal vocational and technical education has been geared too much toward jobs in the modern sector, which cannot absorb many new workers. Informal training — chiefly apprenticeship training — doesn't prepare trainees adequately to do account work. To develop the unrealized potential of the informal sector, both formal and informal training should be redirected toward the informal sector.

Côte d'Ivoire spends more of its budget (42%) on education than any other country in the world. Part of its spending on formal vocational education and training should be redirected toward training in the informal sector.

The public costs of formal vocational and technical education (VTE) per student are four to seven times higher than the costs to individuals because of generous scholarship programs, the high cost of expatriate teaching staff, and the underuse of facilities during the current recession. Specific policy measures that would increase the social rates of return on investments in vocational training and education include:

- Reducing scholarships to VTE students.
- Replacing expensive expatriate (mostly French) teachers with Ivorians.
- Building fewer new buildings and making better use of the old ones.
- Upgrading the apprenticeship system by setting up short-term vocational and technical (especially evening) courses that complement apprenticeship training. These would include courses for the self-employed on, say, credit and marketing to help them run their own businesses.
- Promoting the employment of formal VTE graduates outside Abidjan, the magnet for most rural migrants.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Rita Vartanian, room J6-011, extension 34678.

20. Imports and Growth in Africa

Ramón López and Vinod Thomas

Faster economic growth in Africa involves a recovery in the growth of imports — and greater efficiency in their use.

Broad comparisons show that growth is linked to imports, but country comparisons over short periods show the link to be more flexible than fixed. Countries can adjust import intensities in the short term — maintaining growth, even with depressed imports.

For Africa, in these stringent times, a big question has been whether better domestic policies induce structural changes that also spur more growth for each dollar of imports. Put differently, Can African countries reduce their historically high import dependence? Can they resume growth without substantially increasing their imports?

One set of policies affecting the import efficiency of growth includes those that improve the incentives for agriculture and for restructuring the manufacturing sector. Another set includes macroeconomic changes that affect the real exchange rate and the level and composition of public spending. Such policy changes have been under way to varying degrees in several African countries — among them, Ghana, Kenya, Zaire, Zambia, Nigeria, Tanzania, Madagascar, and Côte d'Ivoire.

What, then, are some of the policy outcomes that change the import intensity of growth?

Some shifts reduce import dependence. One is a shift from public consumption to private consumption. Another is a depreciation of the real exchange rate. And a third is a shift to agricultural growth.

By contrast, opening the trade regime and promoting exports would encourage imports (and exports). Restructuring industry to increase its productivity would also increase some imports (but reduce others).

What emerges from this analysis is that some policy changes and structural adjustments in Africa can change traditional import intensities. But if African countries are to achieve faster sustained growth, imports will need to increase substantially from the recently depressed levels. And countries will have to use those imports far more efficiently than in the past.

This paper is a product of the Trade Policy Division, Country Economics Department. Please call extension 61679.

21. Effects of European VERs on Japanese Autos

Jaime de Melo and Patrick Messerlin

Even for so highly differentiated a product as cars, voluntary export restraints do not protect domestic industries or consumers. Demand is deflected to unrestrained third countries, the restrained exporter upgrades quality, and consumers end up paying more.

The voluntary export restraints (VERs) that the U.K., France, and Germany negotiated with Japanese automakers show why VERs do not protect domestic industries and probably end up costing consumers more.

First, most EC countries followed suit after the British negotiation with Japan in 1976 (the domino effect).

Second, the VERs did not arrest import penetration by third countries. When Japanese imports were restricted, the French simply bought Italian and German cars.

Third, the Japanese upgraded the quality of cars sold on the French market between 1981 and 1983. (The VER was not strictly binding in France until 1984 and in Germany until 1985.)

Fourth, between 1979 and 1986 French, German, and Japanese producers supplied an increasingly similar product mix on the French car market, whereas the Italians created a distinctly different type of product.

Fifth, in 1984 and 1985 the quota raised auto prices in France about 9%, costing French consumers about 320 million francs and saving only about 300 jobs.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Sheila Fallon, room N8-061, extension 61680.

22. Methodological Problems in Cross-Country Analyses of Economic Growth

Jean-Paul Azam, Patrick Guillaumont, and Sylviane Guillaumont

Cross-country studies provide a weak basis for the formulation of economic policies in developing countries.

Many cross-country studies have been conducted over the last 20 years to explain how various factors affect economic growth rates in the developing economies. The data in these studies — which underlie international economic comparisons and serve as the basis for economic policy recommendations — give researchers the systematic and scientific information required for their investigations. But the conclusions are often fragile and sometimes contradictory.

Research results are sensitive to the choices of components, the aim of the investigation, and the type of model used. In general, researchers need to have better statistical data, particularly on economic policy indicators, and must subject the selected sample to careful tests.

Cross-country studies are particularly unreliable when it comes to estimating the economic impact of government budgetary and regulatory policies. These studies thus provide only a weak basis for developing country economic policies.

This paper is a product of the Socioeconomic Data Division, International Economics Department. Please contact Estela Zamora, room S7136 extension 33706.

23. Cost-Effective Integration of Immunization and Basic Health Services in Developing Countries: The Problem of Joint Costs

A. Mead Over, Jr.

The debate between those who favor delivering comprehensive primary health care from fixed health centers and those who favor delivering selective primary care from mobile health teams can be decided, in principle, on empirical grounds. Key requirements for choosing the more cost-effective approach in a given developing country are (1) an effective measure common to both types of health care programs and (2) an approach to modeling joint costs.

With limited budgets for rural primary health care, developing countries are under pressure to integrate the basic medical services that government health centers provide with the vaccination programs that mobile immunization teams handle. For health planners, the question is whether to organize the integrated services around the fixed health centers or around the mobile health teams. Implicit in this decision is a choice between more comprehensive health care from the fixed center versus more selective care from the mobile teams.

Application of cost-effectiveness analysis is complicated by two inherent difficulties. First, because the two types of health care programs improve the health of different target groups, some common measure of the effectiveness of the two programs must be agreed upon. Here the healthy-life-years saved by the two alternative programs is proposed and implemented as a useful common measure of effectiveness.

The second difficulty is that of modeling the joint costs of simultaneously producing more than one health care service. In some situations the degree of "jointness" of the cost structure and the associated production technology have an important impact on the relative cost-effectiveness of the two alternative approaches.

Using the method described here, economists can address this problem in a way that does justice to both the superior efficiency of the mobile teams and the superior comprehensiveness of the fixed centers. Special purpose models such as this one can guide policy decisions since they are less complex than more general models and can be easily understood by decisionmakers.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Noni Jose, room S6-105, extension 33688.

24. World Bank Investment in Vocational Education and Training

John Middleton and Terri Demsky

The challenge facing future World Bank investment in vocational education and training is to bring past successes in middle-income countries to the lower income countries. Strategies naturally will have to vary greatly from country to country.

World Bank investment in vocational education and training (VET) has averaged $500 million a year in the 1980s. Since 1980 there has been a significant shift away from investments in secondary diversified vocational schools to nonformal training centers and university programs. Investments in industrial training have increased while those in agricultural education have been reduced. This change reflects lessons about the effectiveness of different types of training.

In the past ten years the most striking achievement of VET has been the development of national training systems from nonformal training centers and postsecondary technical education institutions. This has happened largely in middle-income countries, where project investments have emphasized expansion of institutions and the link between training and employment. In middle-income countries all types of training — secondary, nonformal, post-secondary, and VET teacher training — have been successfully established.

Investments in low-income countries, especially those in Sub-Saharan Africa, have been less successful. Implementation weaknesses and stagnating economies have made it difficult to set up any type of training. Efforts are hampered by inefficiency and poor participation. Investment in national training programs has just begun in these poorer countries, and success is uncertain because of continuing economic constraints.

These patterns suggest that the level of economic development and the consequent size and dynamism of industrial employment have a powerful influence on the outcome of investments in vocational education and training. Therefore, future investment strategies should differ substantially among countries at different levels of industrialization.

In middle-income countries where national training systems already exist, VET investments should emphasize rehabilitation, quality improvement, and further development of institutional efficiency.

Some of the lower-middle-income (and larger low-income) countries are in the early stages of developing national training systems and can benefit from the experiences of the more advanced countries. VET investments in those countries should support institutional development and policy issues, including separation of vocational training from other education and development of alternatives to direct government financing.

In small low-income countries, recent Bank experience suggests that resources be concentrated in nonformal training centers, training quality, development of management capacity in training institutions, and aggressive marketing of training opportunities and services.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Workie Ketema, room S6-228, extension 33651.

25. Israel's Vocational Training

Adrian Ziderman

Vocational secondary schooling costs much more than other types of job training in Israel — and appears not to lead to correspondingly higher earnings.

Eighty percent of the trainees headed for Israel's labor force go to full-time vocational secondary schools that devote a third to a half of the curriculum time to general studies. Students tend to come from a higher socioeconomic level than those in other training programs.

The rest of Israel's vocational students are evenly divided among the Ministry of Labor's remaining three programs. The apprentice attends school one day a week and works on the job the rest of the time. The student is typically a low academic achiever with a low socioeconomic background.

Students in industrial schools spend three days a week in the plant where the school is located and three days in the school. The program is less demanding and more practical than the vocational school curriculum. No tuition is charged and trainees are paid for their work.

The one-year full-time training courses for 16 and 17-year-olds, many of whom are drop-outs, concentrate on practical training. Those who complete the course get additional training in the army during their compulsory three-year service.

Of the four types of training in Israel — vocational secondary schools, apprenticeship courses, industrial schools, and full-time training courses — vocational school is by far the most expensive. In 1977 Michael Borus found that the cost of apprenticeship courses was one-seventh that of vocational schools; industrial schools and training courses cost only a third to a quarter as much. This 7-year longitudinal study confirms Borus' earlier tentative findings, concluding that since post-training earnings were roughly the same for all four programs, the apprenticeship system was the most cost-effective.

These findings echo those of case studies in other countries. But, to conclude that vocational training schools are not cost-effective on the basis of eventual earnings alone is to ignore part of the picture. The goals of the vocational secondary school in Israel extend beyond those of providing usable labor market skills. These wider social and educational goals are largely absent from the narrower and more work-oriented types of training. In any cost-benefit evaluation of vocational schooling, these goals would have to be given more weight.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Workie Ketema, room S-6228, extension 33651.

26. Changing Patterns in Vocational Education

John Middleton

Investment in secondary vocational schools has declined in favor of nonformal teaching systems, which take a long time and multiple investments to establish. The shift leaves secondary education in need of new direction.

One of the long-standing issues in education development has been productive job training in rapidly changing economies. The argument has been made that vocational secondary schools are not well-equipped for this task — that they often become second-best educational alternatives for young people rejected by the academic mainstream. Although vocational and academic schooling often result in similar levels of education and employment, the higher costs of the vocational schooling make it a less attractive alternative.

In the past 23 years of Bank lending for vocational education and training (VET), there has been a clear shift away from vocational secondary schools toward various forms of training, outside the formal educational system.

Some of the nonformal training programs have been quite successful. Nine characteristics have contributed to the success of three such programs in Korea, Jordan, and Brazil:

1. Long perspective with multiple investments: It took 15 years and more to establish each of the three programs and as many as five project investments.

2. Expanding industrial employment: Industries in all three countries had a strong demand for skilled workers.

3. Small formal beginnings and incremental expansion: The first projects were relatively small and simple. In the middle and later stages the three countries were able to build and expand on their own experience.

4. Responsive planning: The training systems were planned in response to, not anticipation of, employment demand.

5. Early and sustained involvement of enterprises: Sustained efforts were made to link training with employment by involving employers.

6. Evolution of policy and management capacity to match system complexity: As the training systems grew, quasi-autonomous national agencies were created to manage job training.

7. Increasing attention to alternative financing sources: Efforts were made to find financing other than government appropriations from general tax revenues.

8. Investment in quality: The quality and relevance of teaching and learning was improved.

9. Flexibility of curriculum and institutional design: The training institutions that were created could respond easily to changing economic circumstances.

Although investment has been shifting into nonformal training, secondary education is in need of new directions. Diversified secondary schools have not provided that direction, leaving questions about how secondary schools might meet social objectives cost-effectively.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Workie Ketema, room S6-228, extension 33651.

27. Family Background and Student Achievement

Marlaine E. Lockheed, Bruce Fuller, and Ronald Nyirongo

Prior research has underestimated the influence of family background on student achievement in developing countries.

Past research in developing countries has shown that school-related influences have a greater effect on student achievement than does family background, a finding that contrasts sharply with research in industrialized countries. This has led to the conclusion that schools in developing countries are more effective than schools in industrialized countries.

But the earlier work suffers from conceptual flaws. It has defined family background in material terms and failed to consider other motivational factors. Earlier research has also used measurements (such as level of parental education and occupational status) more appropriate to the industrialized world than to the class structure of the country being studied.

Two studies of student motivational behavior in Thailand and Malawi address these shortcomings. In the Thailand study, conventional measures of family background (parental education and occupation) were kept constant. Student achievement in both urban and rural settings was related to such motivational variables as educational expectations, attitudes and effort.

The Malawi study employed definitions of family background more relevant to a developing country: labor demands placed on children, basic attributes of houses, and mother tongue. These variables were more consistently related to pupil achievement than were the conventional indicators, parental education and occupation.

If, as these two studies indicate, family background is as important to students in developing countries as in industrial ones, two types of action are suggested. First, education programs could be designed to take into account family background characteristics of students. They might include early intervention programs, such as preschool or a change in school schedules to better meet patterns of child labor. Second, education systems could work to improve student motivation and parental support directly by promoting the importance of education.

In sum: Researchers should be more careful in their modeling of family and school characteristics in the developing world. Failure to recognize the family's early and apparently lasting influence is a failure to accommodate education programs to indigenous realities.

This paper is a product of the Population and Human Resources Department, Education and Employment Division. Please contact Rosemarie Rinaldi, room S6-027, extension 33278.

28. Temporary Windfalls and Compensation Arrangements

Bela Balassa

Developing countries that export a single major commodity subject to considerable price instability can even out temporary fluctuations in export prices by setting up compensation arrangements that hold the proceeds of a booming sector in a special fund outside the budget.

Sharp fluctuations in the export prices of a major staple commodity have three jarring effects on economic activity. First, price hikes in a booming sector lead to a deterioration in the position of other exporters as resources are redirected to the desired sector and shortages emerge — and falling prices in a sagging sector affect other, unrelated exports. Second, governments tend to spend additional revenue generated during the boom and to keep on spending even after prices fall. Third, the export surge generates a domestic expansion, bumping up against production limits that bring on inflation and, if a reversal occurs, unemployment.

To reduce the effects of highly unstable commodity prices and increase the government's share in the proceeds of the booming sector, developing countries can funnel the revenue from higher export earnings into a special compensation fund. The fund works like this: By setting up a variable export levy somewhere between the actual export price and an agreed-upon base, the government appropriates the windfall revenues. In a downturn, the fund pays producers the base price.

The fund is set up to handle these transactions outside the budget. This has the effect of:

- Limiting price changes between domestic and imported goods.
- Holding down government spending when export earnings are high (since the spending programs may not be reversible).
- Reining in inflation to prevent a wage-price spiral.

Chile and Cameroon have set up such arrangements. In Chile the aim was to avoid currency appreciation in the event of temporary increases in copper prices. In Cameroon, the government has repatriated only part of the oil earnings, and included only some of these revenues in the budget.

Compensation schemes will work in other developing countries whose major export is a staple commodity, subject to sharp price fluctuations, and which accounts for a large share of gross domestic product. In this way, the exchange rate, the money supply, and the budget will be unaffected.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Norma Campbell, room S9-047, extension 33769.

29. The Relative Effectiveness of Single-Sex and Coeducational Schools in Thailand

Emmanuel Jimenez and Marlaine E. Lockheed

Single-sex schooling is more effective for girls, but coeducational schooling is more effective for boys in improving student performance in mathematics. The differences are due to peer group effects, rather than to school or classroom charcteristics.

Several studies of the relative effectiveness of single-sex and coeducational schools have shown that single-sex secondary education promotes both academic achievement and orientation, particularly for girls. "Single-sex" education also includes coeducational schools where students are separated into single-sex classes for instruction.

Most studies of single-sex education have made little or no attempt to control for factors such as student background, school type (public or private), and school selection by parent or students. These factors can affect achievement and skew analyses that seek to compare only the effect of single-sex education versus coeducation.

Mathematics test scores of Thai eighth-graders, obtained during the 1981-82 academic year, are compared for students in coeducational and single-sex schools. The study overcomes the methodological problems by holding constant student background, school type, and school selection. Moreover, the study minimizes the effects of non-measured variables such as a student's ability, motivation, or previous achievement. It does this by measuring performance at the beginning and again at the end of the year to focus on the educational "value added" during that year.

Girls in single-sex Thai schools scored higher in mathematics achievement at the end of the eighth grade, but the reverse was true for boys, who exhibited higher scores in coeducational schools. Why was this so?

The largest factor affecting student performance was the student's peer group. The data did not permit an analysis of how peer groups affect achievement, but studies in developed countries suggest that class participation and leadership opportunities are suppressed for girls in coeducational settings and for boys in single-sex settings.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Teresa Hawkins, room S6-224, extension 33678.

30. The Adding Up Problem

Bela Balassa

Rather than market constraint in the developed countries, export growth in the developing countries is largely determined by supply factors. This conclusion supports the views of those who advocate the application of outward-oriented policies in the developing countries.

This paper presents empirical evidence pertaining to the "adding up problem" and the "fallacy of composition." It is shown that, rather than market constraint in the developed countries, export growth in the developing countries is largely determined by supply factors. Thus, the deceleration of economic growth in the developed countries after 1973 was accompanied by an acceleration of the growth of the exports of the developing countries.

It further appears that, under realistic assumptions, the future growth of manufactured trade between developing and developed countries would result in a net employment gain for the latter. This would happen as employment gains in technologically advanced industries employing technical and skilled labor would more than offset losses in industries using chiefly semi-skilled and unskilled labor. At the same time, these losses would occur over a ten-year period, thereby limiting the cost of adjustment.

The cost of adjustment in the developed countries would decrease further if outward-oriented policies gained wider acceptance in the developing countries as these policies ensure the upgrading and diversification of exports and permit increased intra-industry specialization that limits pressures on particular industries in the developed countries. Thus, the argument of the proponents of the fallacy of composition thesis is turned on its head: the difficulties of adjustment in the developed countries can be reduced if more developing countries adopt outward oriented policies, rather than persisting in exporting a limited number of simple manufactures.

This conclusion gains in force if one considers that the foreign exchange obtained through the exportation of manufactured goods is spent by the developing countries to purchase manufactured goods from the developed countries. Thus, the balance of trade does not change and, under outward orientation, the increment in foreign exchange is often utilized in the same industries via intra-industry specialization.

Also, developing countries can export to other developing countries. With the industrialization of outward-oriented countries, they can increasingly exchange manufactured goods with countries at lower levels of development, thereby providing an impetus to their economic growth without encroaching on developed country markets.

The findings of this paper have important policy implications. They support the views of those who advocate the application of outward-oriented policies in developing countries. This conclusion is strengthened if consideration is given to the possibilities of increased trade among the developing countries themselves. Finally, outward orientation promotes efficient import substitution through the reform of the system of incentives.

This paper, a product of the Office of the Vice President, Development Economics, is a background paper for the 1988 World Development Report. Please contact Norma Campbell, room S9-047, extension 33769.

31. Public Finance and Economic Development

Bela Balassa

Budget deficits tend to lead to a deterioration of the balance of payments. Furthermore, increases in government consumption and the public investment have adverse effects on economic growth.

This paper reports on tests of alternative hypotheses as to the effects of a budget deficit, examines the influence of the size of the government on economic growth, and investigates the impact of public investment on private investment, total investment, and economic growth.

The econometric results provide evidence that a substantial part of the budget deficit of the developing countries is externally financed. Also, the budget deficit appears to adversely affect private investment. However, a correlation between the budget deficit, on the one hand, and the money supply, inflation rates, and economic growth, on the other hand, has not been observed.

At the same time, there is a negative correlation between the ratio of government consumption to GDP and economic growth. This relationship applies to all developing countries as well as to the regional subsamples of countries in Africa, Asia, and Latin America.

Finally, there is a negative correlation between public investment, on the one hand, and private investment, total investment, and economic growth, on the other. It further apppears that the negative effects of public investment on economic growth can be decomposed in two parts: their adverse impact on total investment and their unfavorable influence on the efficiency of investment.

These findings have important implications for the developing countries. They show that budget deficits have adverse effects on the balance of payments as well as on domestic investment. It further appears that increases in government consumption adversely affect economic growth. Finally, increases in public investment not only crowd out private investment but tend to lower the efficiency of investment, with adverse effects on economic growth.

The conclusions point to the need for reducing budget deficits in developing countries. They further favor lowering government consumption as well as public investment in these countries.

This paper, a product of the Office of the Vice President, Development Economics, is a background paper for the 1988 World Development Report. Please contact Norma Campbell, room S9-047, extension 33769.

32. Municipal Development Funds and Intermediaries

Kenneth Davey

Where rapid urbanization strains the capacity of local governments to provide necessary public services, municipal development funds can channel new investments to municipalities and strengthen local government.

Urban populations are growing at nearly double the rate of population growth in developing countries, putting considerable pressure on local governments to expand their physical and social infrastructure. Crowded cities are short of funds and unable to attract investments to expand the facilities, services, and enterprises needed to upgrade urban areas. To compound the problem, municipal governments, which bear most of the responsibility for urban areas, lack the financial and technical resources.

One way to route new investments to local municipalities is to establish municipal development funds. These funds lend money to municipal clients (or provide a mix of grants and loans) for long-term conventional investments in urban infrastructure, commercial plants, housing, and other important facilities.

These funds have attracted the support of international aid donors because they offer a way to provide wholesale funding for a wide range of urban investments. Most of the recent aid projects are at an early stage. Donors have focused on developing appraisal skills and establishing technical standards for the projects, but equity is a prominent objective, particularly for investments in water supply, sanitation, and other neighborhood improvements. Typically the funds combine financing with measures to strengthen the financial and technical capacity of local governments.

To date, a few of these funds have improved the capacity of local governments to operate, expand, or recover costs. But the record of recent minicipal development fund programs is better. The new funds improve the distribution of funding for urban investment and strengthen municipal governments. .

This paper is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

33. Fiscal Policy in Commodity-Exporting LDCs

John Cuddington

Commodity-exporting countries have sometimes found themselves worse off after a boom than before it, due to fiscal mismanagement of the boom proceeds. Good fiscal control during booms can temporarily accelerate the rate of economic development.

Revenues in countries that rely heavily on one or two primary commodities tend to fluctuate widely with prices in international markets. This fluctuation is especially wide when export taxes are a large part of the total tax base but also when the private sector reaps most of the gains from booming prices.

Most developing countries have over consumed in response to windfalls from surges in world prices. In many cases government spending has outstripped the gain in revenues. These sharp increases in government spending are difficult to reverse when the boom ends and often lead to large fiscal deficits rather than surpluses.

Countries like Cameroon and Colombia, however, whose policies emphasized conservative fiscal management, have generally benefited from booms. The most effective government policies:

- Allocate public investment programs to sound projects that do not involve burdensome recurring costs.
- Keep government spending at levels consistent with long-run budget expectations.
- Maintain prudent external borrowing and foreign exchange reserve policies.

Programs along these lines have the potential to reduce a country's debt and restore economic growth.

This paper is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

34. Fiscal Issues in Macroeconomic Stabilization

Lance Taylor

Rather than market constraint in the developed countries, export growth in the developing countries is largely determined by supply factors. This conclusion supports the views of those who advocate the application of outward-oriented policies in the developing countries.

A key question for stabilization programs is this: How do governments get into fiscal difficulty in the first place?

Three views predominate: the political deficit, the structural deficit, and the inflation tax. In the first view, the state is forced toward taxing too little and spending too much, both to pay off specific interest groups and to sustain employment through aggregate demand. In the second view, the economy suffers a contractionary shock — such as falling terms of trade or interest rate incursions on external debt — which the government tries to offset by fiscal means in the short run. In the third view, the state indulges the desire to use revenue from the inflation tax in the absence of other sources.

Fiscal deficits thus have numerous causes — not all of them irrational, not all adding to aggregate demand. Reducing the deficit is nevertheless the sine qua non of orthodox stabilization packages. How does such austerity affect an economy's chances of achieving the normal policy goals of:

- Maintaining socially acceptable capacity use and growth?
- Keeping inflation tolerable?
- Altering the distributions of income and wealth?
- Maintaining self-reliance in trade and external finance?

It makes each of these tasks harder, because of the incomplete understanding of the likely effects of fiscal measures.

First, policymakers need to know more about the specific effects of different policies. For example, cuts in public investment may also cause private capital formation to decline. Changes in the prices that public enterprises charge for food or essential services can have strong distributional repercussions. And the bidding up of interest rates can, if accompanied by other incentives, make capital repatriation and emigrant remittance more likely.

Second, fiscal measures should not be independent of other policy moves. If devaluation causes contraction, teaming it with fiscal restraint may lead to extreme losses of output — the overkill for which orthodox programs are often criticized.

Third, fiscal measures can sometimes substitute for other (less savory) policy changes. For example, the narrower and more directed fiscal interventions can avoid many of devaluation's unpleasant economywide effects (political visibility, output contractions, and price inflation because of the higher costs of imported inputs).

This paper is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

35. Improving the Allocation and Management of Public Spending

Stephen Lister

The reforms most needed to rehabilitate a developing country's planning and budgeting system are generally simple organizational measures, not sophicsticated analytical techniques.

When a country's planning and budgeting system is dilapidated, an important first step is to rehabilitate basic budgetary and accounting functions and to generate public expenditure data that can provide a starting point for rational planning. Other basic measures include:

- The budget process should first determine what resources are available and adopt aggregate revenue and expenditure targets. Then the entire set of public expenditure issues should be looked at simultaneously. If total expenditure is allowed to be the outcome of the aggregation of sectoral bids, the overall expenditure is almost certain to be unsustainable.

- The responsibility for reconciling expenditure bids with agreed overall targets must be decentralized. Sectoral ministries should be given ceilings within which to prepare their estimates.
- It is vital that recurrent and development expenditure programs be considered simultaneously in each sector, since a country's ability to sustain the recurrent costs arising from new investment may be doubtful. In restructuring recurrent budgets, it is important to establish "norms" for the level and distribution of expenditure to provide properly for key services.
- In the long run, the budgeting and planning process should be made public in order to educate public opinion about economic alternatives, build a consensus, and spread responsibility for public spending choices.
- Monitoring development projects and programs requires explicit information on actual expenditures of individual projects and the entire program, including simple breakdowns by implementing agency, sector, source of finance, and so on. For investment programs, it must be possible to relate expenditure information to a financial plan for each project. The use of standardized project profiles for all approved projects is an invaluable technique.
- The financial woes of developed countries increase the value of external aid and the leverage exercised by aid agencies. To minimize friction with aid agencies, governments should exercise careful aid management by monitoring project preparation and implementation, working to minimize project problems, and encouraging dialogue between the government and aid agencies.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

36. Social Security Finance in Developing Countries

Douglas J. Puffert

Social security systems in developing countries can provide a pool of investment capital to spur economic growth. But many systems now showing surpluses may become insolvent because of poor management.

Social security systems usually cover less than 10 percent of the population of developing countries. Yet in a number of countries, these systems make up a large proportion of public sector revenues and expenditures.

Most social security systems in developing nations are running substantial surpluses. If the systems are to meet future obligations, reserve funds and surpluses should be invested in safe assets with real positive rates of return.

But many countries lack well-developed financial markets and good domestic opportunities for productive investment. The government usually controls social security systems — and often uses the surpluses to finance government deficits.

Economists are divided over how social security systems affect private saving and capital accumulation, which leads to long-term growth. They also disagree on the inefficiencies which social security systems introduce into labor markets.

It is clear, however, that investing social security funds in government securities increases the risk of the social security system's insolvency.

Governments facing fiscal difficulties find it tempting to expand the money supply and drive up inflation. This cuts government obligations to social security reserve funds by reducing the real value of the investments in government bonds.

There is also constant pressure for many governments to increase benefits without increasing contributions. Although such action is expedient, it often proves unsustainable. A government's ability to resist such pressure thus has a direct bearing on the long-term success of the system.

One system that stands out as sound, with wisely invested reserves, is the regulated private social security system in Chile.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

37. Black Market Premia, Exchange Rate Unification and Inflation in Sub-Saharan Africa

Brian Pinto

The black market premium on foreign exchange is an implicit tax on exporters. Therefore, eliminating the gap between the official and black market exchange rates without raising taxes or cutting government spending could raise inflation substantially.

The links between exchange rate and fiscal reform are developed for countries where the black market premium on foreign exchange is exceptionally high, often exceeding 100 percent, as has been recently observed in Africa. Exchange rate reform is motivated by the allocative goal of stimulating exports through real depreciation. By interpreting the premium as a tax on exports, it is argued here that this goal is equivalent to reducing the premium, or unification of official and black market exchange rates.

Unification also has fiscal implications. In the common case of government's being a net buyer of foreign exchange from the private sector, there is a trade-off between the premium (tax on exports) and inflation (tax on domestic money) in financing the deficit. Therefore, unification could raise the inflation substantially as the lost revenue from exports is replaced with a higher tax on money. This will occur even if real government spending remains constant, unless there is a fiscal response to compensate for the loss of export revenues.

The analytical ideas are illustrated with the unification experiences of Ghana, Nigeria, Sierra Leone, Zaire, and Zambia. In order to avoid costly surges in post-unification inflation as recently observed in Sierra Leone and Zambia, exchange rate reform may have to be slowed down to accommodate fiscal reform. This applies especially when the premium is high, with significant revenue and redistributive implications, and policy credibility is low. Even so, discrete maxi-devaluations might be preferable to accelerated crawls. Based on the country experiences, some guidelines are suggested for the transition to unified rates. Lastly, a changed emphasis in policy conditionality is argued for.

This paper is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

38. Intergovernmental Grants in Developing Countries

Larry Schroeder

The method a central government uses to transfer funds to local jurisdictions can greatly affect a country's development efforts. But the effects of the transfers are seldom analyzed, resulting in intergovernmental grant systems that fail to achieve their desired objectives.

A country's grant system is the product of its political environment. Such systems tend to develop over time in response to current political needs and then become institutionalized. Since they have developed in a haphazard fashion over time, grant "systems" commonly are not systems at all. Hard-pressed government ministries seldom undertake any thorough analysis of these arrangements, hence their overall impact is unknown in spite of the importance of this use of resources.

Grants from central governments become more important sources of local revenue as local governments are expected to play larger roles in the provision of public services.

Grants are used in hopes of achieving a wide variety of goals. One common rationale for intergovernmental grants is to redistribute national income or equalize living standards by helping governments deliver public services in economically depressed areas.

Since transfers may be seen locally as "costless" gifts from the higher level of government, there is little pressure on localities to mobilize resources of their own or to spend the funds efficiently. Few developing countries have the resources to conduct audits to ensure the accountability of local government spending.

The goal of assisting decentralized decisionmaking by transferring funds to local units can also conflict with the objective that central government revenues be spent efficiently. Decentralization implies local control over the use of funds; the desire for effective use of centrally collected funds calls for considerable oversight of local spending.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

39. Fiscal Policy in Low-Income Africa

Stephen A. O'Connell

Fiscal restraint, a precondition for economic recovery in much of Africa, should go hand-in-hand with improved public sector efficiency in delivering basic human services and upgrading infrastructure.

In many African nations, the fiscal balance is extremely fragile, so fiscal restraint is necessary for stabilization and adjustment efforts to succeed.

Governments tend to increase public expenditures when export commodity revenues are high — and maintain public spending even after revenues fall. This is a formula for building unmanageable debt. Botswana and Cameroon, which exercised restraint during boom times, are exceptions to the rule in Africa.

Inflation, driven by public spending, has serious consequences such as the erosion of the real value of taxes, adding to public deficits. However, attempts to reduce inflation through fiscal austerity may have undesirable side effects, if austerity is pursued in the wrong way when public sector real wages are driven down below subsistence, productivity is reduced.

Low public sector productivity results in poor delivery of human services, the deterioration of infrastructure, and low generation of revenue, hindering economic growth.

Fiscal deficits drove real exchange rates up in the late 1970s and early 1980s — and fiscal policy should now facilitate real depreciation adjustment by pulling deficits down.

External aid has often supported unsustainable fiscal policy. Far from lessening the need for structural adjustment, it should now be used for rehabilitation and infrastructure development.

Market-oriented exchange rates are not a substitute for fiscal restraint, but a complement. Flexible rates alone failed in Zambia and Sierra Leone. Combined with prior fiscal restraint, however, they succeeded in Ghana.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

40. Financial Deregulation and the Globalization of Capital Markets

Eugene L. Versluysen

Rapid financial deregulation and the globalization of capital markets have led to dangerous financial volatility that could have a destabilizing impact on major economies. To reduce this volatility, new regulation may be needed.

Financial deregulation in recent years has vastly increased the ability of financial markets to allocate international capital efficiently. It has also sparked explosive growth in financial transactions and resulted in a restructured, more competitive, and less costly financial services industry.

But deregulation has proceeded so rapidly that the volume of purely financial transactions now greatly exceeds that of transactions driven by international trade in goods and services. Financial activity is now "delinked" from other factor markets and increasingly driven by speculation for short-term profits rather than by broader economic activity.

This new pattern has led to growing economic uncertainty and instability. Markets now run around the clock and respond so rapidly that there is a growing danger of chain reactions that could precipitate global market failures.

Deregulation has also made the conduct of national monetary policy more difficult and the monitoring of markets more complex. For the United States, deregulation has increased the abillity to borrow abroad, thus contributing to fiscal laxity. In that country, there is a need for a single regulatory agency to coordinate the supervision of related financial activities — to lessen the risk of compounded market failures.

Some countries, such as England, have moved to strengthen the capitalization of banks and securities firms. Others (Canada, France, Italy, and Spain) are making progress. But there is acute need for improvement in the United States, where many large banks are undercapitalized in relation to their exposure on LDC loans.

Regulators in the major trading nations need to address the possibility of a full-scale breakdown of the financial system.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

41. Urban Property Taxation in Developing Countries

William Dillinger

The property tax can be an efficient, equitable means of financing municipal services in developing countries, but in most countries it needs reform.

The property tax is the most widely used source of municipal tax revenue in the developing world, but its current yield is often insubstantial.

Poor policy often sets tax rates too low, offers excessive exemptions, and fails to adequately respond to inflation. Poor administration results in incomplete tax rolls, haphazard valuations, and low collection efficiency.

To increase the yield and improve the fairness of the tax, both the policy and administrative problems must be addressed. Tax reform too often consists of a one-time general revaluation or rate increase. Taken alone, neither has a sustained impact on the property' tax's performance.

Tax policy must ensure that rates are set high enough to make the tax worth collecting. Where significant inflation exists, a policy of annual adjustments in rates or valuations should be instituted.

Administrative reforms should support simple procedures for property discovery and valuation, suited to the characteristics of the local tax base and the skills to the taxing authority. Procedures for updating property records to reflect changes in the tax base deserve particular attention. Collection systems should be designed to make compliance convenient; and noncompliance subject to costly, swift, and sure penalties.

Central governments can achieve reform on a nationwide scale — even where the property tax is locally administered — by delivering standardized packages of training and technical assistance to local governments.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

42. Government Pay and Employment Policies and Government Performance in Developing Economies

David L. Lindauer

Excessive spending on public employment has contributed signicantly to fiscal crises in many developing nations. Less visible, but also important for development, is the impact of pay and employment policies on government performance.

Governments should pay more attention to the influence of pay and employment policies on their ability to provide goods and services efficiently.

Rapid and sustained expansion of government employment is common in developing nations. Governments often find it politically difficult to dismiss public workers, even in the face of rising deficits.

An increase in public employment without a commensurate increase in complementary inputs can add to labor redundancy. Increases in salary costs may also crowd out expenditures for materials, equipment, construction, infrastructure, and other inputs.

Many governments use public jobs as a means of lowering urban unemployment. This frequently results in a bottom-heavy structure, with employment concentrated in lower salary grades, and far too many workers for managers to use effectively.

It is also common for governments, in times of fiscal crisis, to reduce the relative pay of more skilled and experienced personnel rather than fire less skilled and redundant labor. This prompts some managers and professionals to quit and leads others to reduce their work effort or moonlight. It also takes a toll on civil service morale and discipline.

A recent study of government policies in Sub-Saharan Africa found, for example, widespread declining levels of real pay, especially at higher salary grades, and excessive compression of the government pay structure. These policies have contributed to growing government inefficiency.

Government employment practices need to be reformed not only because growing wage bills are outpacing tax and export revenues, but also because effective public administration is so important to development. In many countries, a smaller, better-paid civil service might outperform a larger, more poorly paid work force. Because government economic and social roles are so large in many countries, better performance would mean faster development.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

43. Tax Administration in Developing Countries: Strategies and Tools of Implementation

Tax Administration Division

(TO COME)

44. The Size and Growth of Government Expenditures

David L. Lindauer

Over the last 20 to 30 years government spending as a share of GDP has grown worldwide. But in comparing developing and developed nations, the current levels, growth rates, composition, and determinants of government expenditures exhibit significant differences.

The growth of government in the developing economies is compared with the experience of the industrial countries. Relying on measures of government expenditure as proxies for government size the following is observed:

- In the developing nations, central government expenditures as a share of GNP range from 10.8 percent to 62.1 percent and exhibit greater variance than is found in the industrial countries.
- Developing economies, especially the low-income nations, devote, on average, smaller percentages of GDP to government spending than do OECD countries. But compared with the historical experience of the industrial nations, low and middle income nations already consume much higher fractions of GDP.
- For the last 20 to 30 years, expansion in the share of government spending as a percentage of GDP appears to have been the norm in both developing and developed countries.
- Transfer payments in developing nations are still at low levels when compared with advanced economies but appear to be growing quickly. Government consumption expenditures tend to be

growing faster than GDP.

- Available data make it difficult to draw firm conclusions about what increases in government input costs versus increases in level of public output contribute to the growth in public spending.

Numerous arguments can be raised to explain why the size of government relative to GDP has grown in most developing nations. Demographic factors, preferences for public provision of goods and services, and increasing unit costs of government production are all likely to have been influential. Development theorizing itself as well as the "demonstration effect" of advanced capitalist and socialist economies may also have played a role.

This is a background paper for the 1988 World Development Report. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

45. How Much Do State-Owned Enterprises Contribute to Public Sector Deficits in Developing Countries — and Why?

Govindan Nair and Anastasios Filippides

State-owned enterprises in developing countries contribute substantially to public sector deficits — partly because they tend to rely on capital-intensive production techniques and subsidization (through price controls) of output. More attention must be paid to cost effectiveness and cost recovery.

Data for 1980-85 show that value added by state-owned enterprises (SOEs) in developing countries hovers at around one-tenth of GDP at market prices. In this they are comparable to SOEs in industrial countries.

In another respect they are different: their share of gross investment averages three times their share of value added. This reflects the relatively capital-intensive nature of SOE activities in developing countries, possible biases toward capital-intensive production techniques, and heavy subsidization (through price controls) of SOE output.

On the whole, SOEs in developing countries contribute substantially to public sector deficits, typically finance less than one-fifth of their investment, contribute far less to national savings than to national investment, and contribute heavily to the savings-investment imbalance in many countries. Countries differ in how they finance the SOEs' savings-investment gaps, but often the SOEs account for much of the outstanding external debt and at the same time draw heavily on government budgets.

Some SOE expenditures — particularly on investments in infrastructure — are crucial to a nation's development and to the alleviation of poverty. But reducing SOE deficits and keeping them from becoming a long-term drain on public finance will require more attention to cost effectiveness and cost recovery in SOE expenditures and more rigorous appraisal of SOE investments.

This is a background paper for the 1988 World Development Report. Please contact Lupita Mattheisen, room S13-067, extension 33757.

46. The Management of Public Expenditures: An Evolving Bank Approach

Robert Lacey

The key to better management of public spending, including investment programming, lies in the ***process*** *by which programs are identified, prepared, approved, and implemented. Strengthening this process should lead to expenditure programs that are a more appropriate size and are more attuned to overall development goals.*

The Bank is paying increasing, though still unsystematic, attention to the institutional dimension of public expenditure management. This implies analysis of the processes and procedures by which programs are put together with an assessment of the strengths and weaknesses of the institutions involved and the links between them. Advising governments on these aspects requires more expertise than most Bank staff members possess. The Bank should develop staff skills in this area through:

- Better coordination in the Bank of public expenditure reform issues.
- More intensive, systematic staff training, and more contact with academics and other outside experts through such vehicles as seminars.
- Closer collaboration and more systematic exchange of views between operational staff and the Policy, Planning, and Research complex, including incorporation of feedback from the seminars held by the Economic Development Institute.
- A closer working relationship with the IMF, especially the Fiscal Affairs Department.
- Development of a well-designed program of operationally oriented, detailed case studies of specific country experiences (successes and failures) from which to draw lessons for future operations and country and economic sector work.

Addressing these issues may also have implications for the type of lending instrument the Bank uses. Reforms of public spending are usually dealt with through structural adjustment loans, backed up by technical assistance operations — but these may not always be suitable. If major policy decisions are required to bring about important long-term structural changes, a broader, more flexible lending instrument may be more appropriate.

One approach being explored is to finance a time slice of the country's public investment program (either on a sector-by-sector or aggregate basis, depending on the scope of the reforms to be introduced) to support not only more appropriate programs but also institutional and procedural reforms of the ways in which public expenditures are prepared and implemented. This approach could combine quick-disbursing balance of payments support with the longer-term approach needed to encourage institutional reform.

This is a background paper for the 1988 World Development Report. Please contact Lupita Mattheisen, room S13-067, extension 33757.

47. Considerations for the Development of Tax Policy When Capital Is Internationally Mobile

Robert F. Conrad

For tax policy to encourage maximum investment of capital (both foreign and domestic) it is necessary to take into account the potential mobility of capital across international borders. Economic analysis of investment incentives should therefore incorporate the effects of variables such as source rules, nexus rules, attribution rules, foreign tax credits, and so on, in addition to traditional variables such as legal tax rates and the revenue implications of the distribution of the tax base.

To encourage investment and savings, policy-makers cannot ignore capital mobility even in situations where domestic nationals do not invest abroad and foreign investors do not invest domestically. The potential for capital to move across international boundaries creates an opportunity cost for investment in a particular country and throughout the world. In determining marginal effective tax rates it is necessary in addition to traditional considerations, such as tax rates and the distribution of the tax base, to incorporate the following factors:

- Source rules (the basis for taxation).
- Nexus rules (which define who must file and pay income taxes).
- Attribution rules (about accounting methods).
- The scope of bilateral accommodation between countries.

None of these factors is superior economically to the others as a basis for determining tax policy. If tax policy is to encourage international capital flows, explicit tradeoffs may have to be made between increased tax revenues and incentives to invest.

In addition, tax policy should be evaluated with respect to *net*, not gross, capital flows. Tax policy that increases foreign investments in a capital importing country by X percent is poorly designed if it increases the flow of domestic investments abroad by a larger percentage.

International capital mobility provides both costs and opportunities for developing tax policy within a country. Since investors treat taxes as a cost of doing business, each country's tax price should reflect its opportunity cost of investment (either foreign or domestic). These tax prices will differ between countries. Uniformity of taxes across countries can therefore distort rather than improve investment. As long as there is reasonable competition among the suppliers of capital, tax competition among governments may make distribution within the system more efficient. In such a context international cooperation may not be the best method for the development of tax policy for factors that are internationally mobile.

Equity across countries, however defined, should be measured by how the net benefits of capital investment (including tax revenues) are distributed — *not* by how the tax base is distributed. In particular, tax treaties should not be evaluated solely on revenue potential nor should they be canceled unilaterally. Instead they should be evaluated on pragmatic grounds in terms of their effects on investor confidence and their administrative costs.

This is a background paper for the 1988 World Development Report. Please contact Lupita Mattheisen, room S13-067, extension 33757.

48. Do Taxes Matter? A Review of the Incentive and Output Effects of Taxation

Jonathan Skinner

(TO COME)

49. Public Sector Pricing Policies: A Review of Bank Policy and Practice

DeAnne Julius and Adelaida P. Alicbusan

Six sectors — health, education, housing, fertilizer, ports, and railways — have made little attempt to incorporate efficiency pricing into public sector pricing. And most sectors pay far too little attention to fiscal objectives in public pricing.

Nearly a decade has passed since the Bank codified its position on cost recovery policies for public sector projects, in Operational Manual Statement (OMS) 2.25. OMS 2.25 recommended that a common analytical framework be used in all sectors to determine appropriate pricing guidelines and cost recovery targets. That framework involved two steps:

- Estimating efficiency prices — prices that would maximize the net economic benefit from the project.
- Adjusting those prices to take into account nonefficiency objectives (distributional, fiscal, or financial) and implementation constraints.

In a review of 13 sectors, the authors have found that those Bank guidelines are followed fairly closely in seven sectors: coal, irrigation, oil/gas, power, roads, telecommunications, and water/sewerage. In these sectors, the approach has proven effective in accommodating economic, distributional, and financial objectives — primarily through carefully designed tariff structures.

In the other six sectors the focus is heavily on either distributional (health, education, housing) or financial (fertilizer, ports, railways) concerns — with little attempt to incorporate economic pricing principles.

Efficiency pricing is not irrelevant or impossible in these sectors, and — even if used only as a benchmark — could improve sector management and project selection and design.

The fiscal dimension of public sector pricing has received little attention in most sectors. In view of the serious constraints on growth that several less developed countries face because of scarce fiscal resources, this is a major shortcoming — and deserves priority attention in the formulation of future price recommendations.

This is a background paper for the 1988 World Development Report. Please contact Lupita Mattheisen, room S13-067, extension 33757 (122 pages with tables).

50. Fiscal Policy and Stabilization in Brazil

Celso Luiz Martone

The "heterodox shock" approach to stabilization is based on a flawed concept of inflation. The countries that entered this path are likely to remain for a long time under a controlled economy, sacrificing their growth potential for some stability in income distribution and less explosive inflation.

The theoretical basis for the "heterodox shocks" recently implemented in Argentina and Brazil is that chronic inflation is essentially inertial — the product of staggered prices and wage adjustments. The underlying assumption is that the economic process is a cooperative game. Without legal and other forms of coercion, however, individuals tend to cheat — to fix their prices above average to start with.

The inertial hypothesis of inflation is a good description of the dynamics of inflation but it is *not* a theory of the nature of inflation — so the proposed remedy (the "heterodox shock") cannot be implemented successfully.

Moreover, applying that kind of shock destroys the spontaneous operation of the price system by suppressing the information content conveyed by prices and by distorting the allocation of resources.

Once a government engages in such an experiment, it is led to repeat it periodically to survive. The countries that entered this path are likely to remain for a long time under a controlled economy, sacrificing their growth potential on behalf of some stability in income distribution and less explosive inflation.

Eventually this "muddling through" policy may break down, precipitating hyperinflation and consequent structural changes — but this does not seem to be an imminent or even a necessary outcome.

A basic flaw of the "heterodox" stabilization programs was to assume that stabilizing the price level (through a general freeze) was a precondition for fiscal equilibrium and eventual fiscal reform — instead of the reverse. The fiscal austerity promised after stabilization was never accomplished — blocked by bureaucrats and special interest groups interested in maintaining the status quo. The challenge in these countries is to devise economic programs that could make long-term stabilization programs viable and politically acceptable.

In this sense, stabilization is less a technical economic problem than an intertemporal political problem of how to compensate the losers, on the one hand, and on the other hand to convince the majority that the trade-off between sacrificed current consumption and increased future consumption is worthwhile. The precarious political systems in these countries have been unable to deal with conflicts and support consistent long-term policies.

This is a background paper for the 1988 World Development Report. Please contact Lupita Mattheisen, room S13-067, extension 33757 (36 pages with charts and tables).

51 - 60 Assigned to the background papers of the 1988 World Development Report.

61. Student Performance and Schools Costs in the Philippines' High Schools

Emmanuel Jimenez, Vicente Paqueo, and Ma. Lourdes de Vera

Private schools in the Philippines are substantially more effective than their public counterparts in teaching language skills, and much less costly per pupil than public schools.

A key consideration in the policy debate on the appropriate role of private schools in predominantly public school systems is cost effectiveness. The questions are: Do private school students learn more than their public school counterparts? And is it more or less expensive to educate students in private schools?

Past studies in the Philippines and elsewhere have claimed that the educational achievement of students in the private schools is higher than that of students in public schools. These studies provide, however, only weak evidence regarding the relative cost effectiveness of public and private schools. A fundamental weakness is the potentially serious problem of selectivity due to unobserved differences between the student population of each type of school. Most of the studies do not compare costs in the two types of institutions.

Taking selectivity into account, the paper finds that controlling for the effects of students' socioeconomic background, individual motivation, and innate ability, the private schools show a significant edge over public schools in both English and Pilipino (about 15 percent of the sample mean achievement scores). Public schools, on the other hand, had a slight (roughly 4 percent) advantage in mathematics.

A comparison of cost per student reveals a substantial advantage for private schools: public schools in the Philippines spend on average roughly twice as much as private schools. These findings strongly suggest that private schools are an efficient purveyor of secondary education in the Philippines, a conclusion that should be taken into account in the formulation of policy measures that could threaten the existence of such schools.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Teresa Hawkins, room S6-224, extension 33678.

62. Universities in Arab Countries

George I. Za'rour

The quality of higher education in the Arab world has suffered because of the rapid growth of university systems. Despite popular demand, several Arab governments are questioning the wisdom of continuing to expand these systems.

Half the Arab universities in existence today were established after 1970. Enrollment has increased even faster — leading to overcrowding, unqualified faculty, and insufficient equipment and facilities.

Several Arab nations have already moved to control (in some cases, to reduce) enrollment. They have done this partly because of the fall in oil revenues and partly in recognition of the problems related to the rapid growth of the university systems.

Open admissions policies in some systems have led to high failure and dropout rates, as well as to the shunting of many students by default into "schools of last resort:" the arts, social sciences, and law.

As student enrollment expanded rapidly, the quality of education suffered and many universities became less attractive to highly trained faculty. This pattern has contributed to national and regional brain drain.

Overcrowding has also led to a greater reliance on lecturing as a means of instruction, a method not particularly conducive to the development of critical or incisive thinking. Faculty accessibility and strong faculty support for student development seem to be the exception rather than the rule at many Arab universities.

Instruction in French or English, sometimes necessary because of a shortage of Arabic-speaking faculty and a lack of appropriate Arabic texts, hurts students not proficient in those languages.

The cost of underwriting university education at a time of slow economic expansion raises the issue of whether it is better to have unemployed high school graduates or unemployed university graduates.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Christobal, room S6-035, extension 33640.

63. Does Japan Import Less Than It Should?

Kenji Takeuchi

Conflicting studies on Japan's imports of manufactures leave open the question of whether the country's import volume is lower than normal.

Japan's continuing large current account surpluses have promoted a series of investigators to examine the volume and the structure of the goods that Japan imports.

The usual charge is that Japan's level of manufactured imports is too low and that it is low because Japan has erected a wall of trade barriers that limits access by foreign suppliers of manufactured goods. Recent studies have looked at this question to see if Japan's overall imports are lower than they should be, and specifically if Japan imports fewer manufactures than other industrial countries.

A review of the econometric literature gives diverse results. Gary Saxonhouse, Luca Barbone, Marcus Noland, and C. Fred Bergsten and William Cline found no strong evidence that Japanese imports are abnormally low when allowances are made for economic circumstances. But other economists came to the opposite conclusion. Bela Balassa, Kazuo Sato, and Robert Z. Lawrence concluded that Japanese imports were distinctly lower than other countries. Geoffrey Carliner tended to support the latter group.

Japan does import a lower volume of manufactures, why is that so? Is it because of trade and tariff barriers, the Japanese marketing system, or the tastes of Japanese consumers? None of the studies resolved these questions.

This paper is a product of the International Trade Division, International Economics Department. Please contact Jean Epps, room S8-037, extension 33710.

64. Cocoa and Coffee Pricing Policies in Côte d'Ivoire

Takamasa Akiyama

Facing increasingly tough international competition in coffee and cocoa markets, Côte d'Ivoire can increase export revenues from the two commodities 8 percent in 1995 and about 12 percent in 2000 by increasing coffee production and cutting back on the expansion in cocoa production.

Coffee and cocoa are Côte d'Ivoire's two most important commodity exports, accounting for about 50 percent of total exports. In the 1970s, Côte d'Ivoire capitalized on high world prices and a drop in production by other competitors to increase revenues from these crops, but in the mid-1980s the situation changed. Falling world prices and an appreciating currency cut into sales of Ivorian coffeee and cocoa at the same time that international supplies mounted. Brazilian coffee growers increased production after the previous year's drought, and production of cocoa rose in Ghana, Malaysia, and Indonesia. As several major producers backed up their export efforts with aggressive exchange rate policies, Côte d'Ivoire's exporters lost their competitive position.

To offset the slump in revenues, the government will have to reverse this decline in competitiveness. A study of the markets for both these commodities under different pricing and subsidy policies confirms that coffee production should be increased, even at the cost of some reduction in the output of cocoa. This will avoid large government subsidies to cocoa growers and will increase future exports of both products.

One way to do this is to devalue by 10 to 15 percent. Alternatively, the government could reduce cocoa producer prices and increase coffee producer prices. Although either of these policies would overcome short-term problems, a more fundamental change should be considered. Under current market conditions, government-established producer prices are no match for rapidly changing world markets and exchange rates. Unless Côte d'Ivoire adopts a flexible pricing policy, the country may face continuing problems in international competitiveness.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Dawn Gustafson, room S7-044, extension 33714.

65. Interaction of Infant Mortality and Fertility and the Effectiveness of Health and Family Planning Programs

Howard Barnum

Health and family planning programs can draw on each other's strengths to lower the number of births and reduce infant mortality.

The interaction of fertility and infant mortality is well established. Lower infant mortality can lead to lower fertility by reducing the need for replacement births. Conversely, birth spacing improves the chances of child survival. To find out how these programs reinforce each other, a study done in Indonesia estimated the effects that family planning programs have on infant mortality and the effects of reduced infant mortality on fertility. The research compared the cost-effectiveness of health and family planning programs and looked at whether the interaction of infant mortality and fertility influenced estimates of the costs of both programs.

The results demonstrate a substantial spillover effect, confirming that the interaction does raise the cost-effectiveness of both programs. And the study shows that nonhospital health care is substantially more effective than hospital care at reducing infant mortality.

These findings are sufficiently consistent that policymakers should consider the mortality-fertility interaction as a regular part of the appraisal of health and population projects. Integrated programs offer lower costs and more effective promotion. They also improve efforts to assure infant survival and achieve birth prevention objectives.

This paper is a product of the Population, Health and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-250, extension 31091.

66. Slowing the Stork: Better Health for Women Through Family Planning

Anthony R. Measham and Roger W. Rochat

Family planning saves lives and improves the health of women through fewer births, fewer high-risk pregnancies, and fewer crudely performed abortions.

Each year 500,000 women die from causes related to pregnancy — 99 percent of them in developing countries. While many of those pregnancies are unwanted and could have been prevented by family planning, only a minority of developing country couples use effective contraceptive methods. For some women, pregnancy represents a major health risk. Many of them are among the poorest of the poor, living in rural areas of South Asia and Sub-Saharan Africa, and have low education, high fertility, and poor health and nutritional status.

There is also a huge pool of women of

lower risk who want no more children and whose health would benefit substantially from limiting the number of children they bear. In virtually all developing countries, the number of women who want no more children exceeds the number of contraceptive users. What factors determine women's use of contraceptives, and how can family planning programs reach the large numbers of women at risk from further pregnancies?

The most successful family planning policies offer women a variety of contraceptive methods tailored to specific age groups and educational levels. Community-based programs that provide a high quality of family planning services and emphasize the importance of the mother's health will increase the likelihood that these programs will reach women who are not practicing contraception at present.

The question that is always asked is, What will it cost? Much program experience suggests that family planning is one of, if not the most cost-effective means of averting maternal deaths. The savings generated by family planning services could be invested in saving the lives and health of women who do want to have more children.

This paper is a product of the Health Advisor, Population and Human Resources Department. Please contact A. Manciano, room S6-141, extension 33226.

67. Price and Tax Policy for Semi-Subsistence Agriculture in Ethiopia

Robert D. Weaver and Saad Ali Shire

Tax and food price policies are important mechanisms for affecting smallholder food supply.

In the case of semi-subsistence agriculture where wage employment is not available, the role played by prices and taxes in determining production and consumption decisions is not clearly established by economic theories of household choice. This study demonstrates that where choices in production, consumption, and leisure can be made independently, farmers will decide what to grow on the basis of their preferences for marketed goods, and will also be affected by the level and type of taxation.

The model shows the impact of four taxes — agricultural revenue, land (either a head tax or a tax based on land area), production, and marketed goods consumption — on crop production and tax revenues. The results demonstrated that a production tax curtailed output while a lump-sum land tax expanded production. The impact of a tax on agricultural revenue or on products sold in the market depends on the farmers' preferences for marketed goods.

For Ethiopia, a model of production was estimated for eight food crops for semi-subsistence households. In general, production responded to changes in relative expected prices, land availability, level of household demand, and sowing period rainfall. Production of teff, wheat, chick peas, and sorghum was found to increase with higher prices, and production of field peas was found to fall. Evidence suggests that expanding the amount of arable land will raise farmers' output of wheat, chick peas, maize, and sorghum.

These results give strong evidence of the role of producer and consumer prices in semi-subsistence agriculture. In addition, the results show the importance of production capacity, household demand, and climatic factors, supporting a balanced approach to agricultural development that recognizes the joint roles of prices, production capacity, and demand.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Dawn Gustafson, room S7-044, extension 33714.

68. A Comparison of Lamps for Domestic Lighting in Developing Countries

Robert van der Plas

Electric lights are superior to kerosene lamps in almost all ways — they are far more energy-efficient, but their high front-end costs keep many people from enjoying their advantages.

The average amount of fuel consumed for lighting is much higher in villages without electricity than in villages with it — five times higher in Indonesia, twice as high in India. Moreover, people with kerosene lamps have much lower lighting levels than people with electric lights.

Why, then, do people still use kerosene lamps when electricity is available? Mainly because they fit well with a poor family's spending patterns. The price of a wick lamp is low. The monthly cost of using it is low. And kerosene can be bought in small quantities as needed.

But the marginal cost of adding another kerosene lamp is greater than the marginal benefit. The addition of another lamp neither increases the level of lighting nor improves the quality — but it does increase the consumption of kerosene.

People have figured this out. A survey of a few households in Rwanda and Burundi in October 1987 showed that households relying on kerosene wick lamps use only one for the whole house.

Households with electric lights are accustomed to much higher levels of light — for which they have to finance a connection charge and installation cost and for which they pay more for regular use. Such households typically have four or five lamps in the whole house and good lighting levels in each room.

The difference between kerosene and electric lamps are like those between bicycles and cars: both get you where you want to go but at certain costs with certain benefits. Although both kinds of lamps give light, they are not directly comparable because they differ so greatly in their characteristics: it takes 18 kerosene lamps to give off the light of a single 60 watt incandescent bulb.

This paper, a product of the Household Energy Unit in the Energy and Sector Management and Assessments Division, Industry and Energy Department, has also appeared as an Industry and Energy Department Working Paper. Please contact Vonica Burroughs, room S4-035, extension 33635.

69. Does Local Financing Make Public Primary Schools More Efficient? The Philippine Case

Emmanual Jimenez, Vicente Paqueo, and Ma. Lourdes de Vera

Philippine schools that rely more heavily on local sources of income are more cost-effective than those that are more dependent on central funding.

In the highly centralized system of the Philippines, local funding provides the only source of flexibility to meet specific and urgent needs.

The government in Manila, which pays all teacher salaries, finds it easier politically in times of fiscal belt-tightening to cut recurrent costs. Although local funds are relatively small percentage of the education budget, they make an important contribution to covering maintenance and operating costs. For example, the quality of both textbooks and school buildings appears to increase with the level of local funding.

The total cost of education per student also appears to lower in schools with greater local financing, regardless of the perceived quality of the school. Administrators and teachers have greater incentive to be cost-effective when forced to consider the effect of their behavior on the people who live and work in the local community.

The policy implications of these findings for the Philippines are important. They strongly suggest that decentralization will increase efficiency. Without an increase in local funding, the quality of primary education will suffer. Other developing nations, facing similar situations, might also consider more community funding for school systems.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Teresa Hawkins, room S6-224, extension 33678.

70. Vocational Education and Economic Environments: Conflict or Convergence?

Arvil V. Adams and Antoine Schwartz

Macroeconomic policies have a direct impact on the ability of a nation to provide vocational education and training efficiently.

A better understanding of the relationship between economic policies and human capital formation through vocational education and training (VET) will help both development strategists and education planners.

Income policies that make the market less competitive, although designed to correct social inequality, often distort the demand for VET and lead to inefficiencies in its delivery:

- Effective minimum wage policies make enterprises less willing to provide skills training financed by reduced wages.
- Government regulated wage structures that result in wage compression, as seen in many developing countries, reduce the incentive of workers to invest in skills training.

Capital subsidies, and other relative factor cost distortions, may encourage the adoption of capital-intensive technologies that are inconsistent with a country's occupational skills mix and skills training resources. Such distortions will also debase the value of existing skills by accelerating their depreciation.

Trade policies can also influence incentives for efficiency in VET.

- Protectionist trade policies provide shelter to inefficient domestic producers and reduce the market incentives for efficiency in VET.
- Export-led trade policies, coupled with competitive markets for capital and labor, tend to encourage the search for cost-effective forms of VET.

Making economic policymakers aware of the consequences of their policies for human resources development will hopefully lead to the more sensitive development of these policies. By the same token, making those responsible for the development of education and training programs aware of the constraints economic policies provide to their actions will hopefully create opportunities for adapting to these constraints. The paper offers an agenda for the further study of this relationship and its outcomes.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Teresa Hawkins, room S6-224, extension 33678.

71. School Effects on Student Achievement in Nigeria and Swaziland

Marlaine Lockheed and Andre Komenan

Student achievement is directly related to effective teaching practices, which differ from country to country. Conventional school and teacher quality variables are found less effective in boosting learning than teaching quality variables.

Multi-level analyses showed that differences between schools accounted for substantial variance in eighth grade mathematics scores in Nigeria and Swaziland. However, conventional school and teacher quality variables, such as class size, length of school year, and teacher education and experience had no effect on student achievement.

The study — the first completely comparable cross-national comparison of school/classroom effects in Africa — shows that differences in achievement not attributable to student family background are largely due to differences in teaching quality (teacher's use of time for lecturing, testing, etc.).

This finding is important because little research has been conducted in developing countries to test the assumption that enhancing student achievement depends on the ability of teachers to manage the learning environment. The study indicates that the size, direction, and shape of the relationship between teaching time use and student achievement vary from one country to another.

In Nigeria, student time spent listening to the teacher lecture was positively associated with achievement, while time spent doing seat or blackboard work had a negative impact. In Swaziland, by comparison, seat and blackboard work had positive effects, but listening to lectures was unrelated to achievement.

Teaching time spent monitoring and evaluating student performance had good results in Swaziland, but no effects in Nigeria. In Swaziland, the use of published materials was negatively related to achievement, while in Nigeria the use of textbooks had a positive effect.

Teacher effectiveness depends on finding the appropriate mix of alternative uses of instructional time. Since this seems to differ according to the locale, more local research on teaching quality is needed.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Teresa Hawkins, room S6-224, extension 33678.

72. The Relative Efficiency of Public Schools in Developing Countries

Emmanuel Jimenez, Marlaine Lockheed, and Vicente Paqueo

Private schools are a cost-effective option for expanding secondary education in some developing countries. They may also provide some lessons for improving the efficiency of public schools.

In many developing countries, the national commitment to universal education conflicts with the necessity for fiscal restraint. One option for expanding education is to charge fees for public schooling.

But recent World Bank studies of secondary level data in Thailand, Colombia, Tanzania, and the Philippines point to a second, more cost-effective option: rely on private schools to handle the growing demand for education.

Private school students generally outperform public school students on standardized math and language tests. This finding holds, even after studies account for the fact that, on average, private school students in these countries come from slightly more advantaged backgrounds than their public school counterparts. In addition, school expenditure data show that unit costs for private schools are dramatically lower than those of public schools.

The comparative advantage of private schools has important policy implications for public schools. Some efficiency gains can come from replicating the input mix (teacher/student ratios, teacher qualifications) of private schools. The data show that private schools, among other practices, make more efficient use of teachers and have better teaching processes (more tests, more homework, orderly classrooms).

Also effective would be to mimic the organizational incentive structures of private schools. Their administrators have considerable economic and bureaucratic autonomy, and are motivated to encourage better teaching practices — using staff more effectively and cheaply — because they must compete for students and remain accountable to parents who pay the bills.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Teresa Hawkins, room S6-224, extension 33678.

73. Taxation and Output Growth in Africa

Jonathan Skinner

A revenue-neutral shift from import taxes and personal and corporate levies to sales or excise taxes may increase growth rates in developing countries.

Can tax policies be designed to encourage economic growth in developing countries? One view holds that by providing the government with a stable source of funding and reducing the current account deficit, tax revenues encourage long-term growth. In this view, the economic distortions aggravated by tax rates are slight in comparison to such institutional constraints as price controls, foreign exchange allocations, and trade quotas.

The other view is that high marginal tax rates constrain long-term economic development by discouraging business expansion, investment, and foreign trade. The contention is that the benefits of a carefully designed, moderate tax structure exceed the costs of budget deficits or spending cuts.

This paper tests these views by measuring the effect of government spending and taxation on output growth. In theory, higher tax rates shift investment and employment to sectors with low — or even negative — tax rates, such as import-substitution or underground sectors. The lower returns to investment and labor in these sectors mean that the economy will generally record lower growth rates.

Data from 31 African countries show the medium- and long-term effects of fiscal policies on growth during 1965-73 and 1974-82. Government investments for the earlier period were sufficiently productive to justify the distortions imposed by the relatively high tax rates necessary to finance them. By 1974-82, however, the return on government investments had fallen to almost zero, suggesting that the burden of personal and corporate taxes led to a contraction in growth. Although taxes on imports did not affect output directly, such taxes reduce investment and thereby indirectly curtail growth. On balance, sales and excise taxes had the most moderate effects on growth and investment.

In sum, a balanced increase in government spending financed by sales and excise taxes, or by a shift from personal and corporate taxes to consumption taxes, can increase growth rates.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

74. Fiscal Stabilization and Exchange Rate Instability

Andrew Feltenstein and Stephen Morris

Cuts in public spending can, in some cases, be inflationary and should be coordinated with appropriate exchange rate and monetary policies.

A perfect foresight, intertemporal general equilibrium model can be used to analyze the fiscal impact of reductions in public spending. The model permits a consistent analysis of government spending, deficit financing, and exchange rate behavior.

It incorporates features important to analyzing public policy in Mexico, including the cost of producing government infrastructure, a tax system and government exchange rate policy similar to those in Mexico, and the estimated savings behavior of domestic consumers.

Mexican public spending increased from 25.6 percent of GDP in 1973 to 46.5 percent in 1982. This rise was accompanied by dramatic increases in inflation, the government deficit, and external debt.

Policymakers look at such a situation and automatically conclude that stabilization depends on reduced public spending. But when applied to Mexican data for 1983-85, the model shows that public spending cuts alone may be inflationary if they cause a reduction in the productivity of private capital.

The model does not estimate the elasticity of private output to public infrastructure. But even if low elasticity is assumed, spending cuts may produce a reduction in private productivity that will have an undesirable effect.

A decline in productivity may outweigh the impact of falling monetary growth rates and reduced budget deficits. If it does, the benefit of spending on infrastructure outweighs its costs. If, however, government spending produces no useful infrastructure, a reduction in spending will have the desired result of reducing inflation.

Various simulations with the model indicate that dogmatic recommendations for spending cuts can at times be counterproductive.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

75. Welfare Dominance and the Design of Excise Taxation in the Côte d'Ivoire

Shlomo Yitzhaki and Wayne Thirsk

The concept of conditional welfare domi-

nance can be used to determine which excise taxes are preferable, both for equity and administrative feasiblity. Applied to Côte d'Ivoire, the technique shows that the most effective excise taxes would be on electricity and telephone services.

There is a compelling fiscal rationale for encouraging greater reliance on taxing the consumption of electricity and telephone (ET) services.

ET taxes are easy to administer. Enforcement and collection of the tax is relatively inexpensive, since the tax can be added to commercial charges, and the services quickly turned off for nonpayment. It is not difficult to distinguish in most cases between business and personal use of these services. ET taxes avoid the problems of smuggling and evasion commonly associated with taxing the production or use of commodities that can be imported.

On equity grounds, in Côte d'Ivoire at least, ET taxes are clearly the most desirable excise taxes. Ranking alternative commodity taxes with high income elasticity, telephone services clearly dominate — and electricity consumption nearly dominates — the taxation of alcoholic beverages and public transportation.

These conclusions on the distributive impact of alternative indirect tax measures are reached through the application of the relatively new concept of marginal conditional welfare dominance. A commodity tax dominates others on social welfare grounds when a marginal shift in the balance of commodity taxation toward that particular commodity enhances social welfare.

Using household budget data, such dominance can be established statistically and shown graphically without resort to normative considerations. This approach suggests that ET services may be an underexploited tax base in many developing countries.

ET taxes may also meet the test of relatively high efficiency if they can be implemented through a two-part pricing schedule that charges a flat fee for access to service and an additional escalating fee for marginal use.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

76. The Shadow Price of a Tax Inspector

Shlomo Yitzhaki and Yitzhak Vakneen

To make sure that tax collectors do not abuse their powers and that taxpayers obey the law, governments can analyze the tax administration's methods of selecting and inspecting tax returns.

The effects of tax evasion on tax rates and government revenues have focused fresh attention on the question of tax administration. Because of the difficulties of measuring the consequences of good or bad administration, policymakers cannot rely on a wide range of specific information on this subject.

An economist faced with widespread tax evasion is likely to recommend harsher penalties for violations of the tax law. The argument is that compliance and high penalties go hand in hand. But stiffer penalties only work when the administrators are honest; if they are not, the recommendation may backfire as high penalties increase the power of the tax inspector, and provide incentive for corruption.

Using this model, which shows the process of auditing tax returns as a decision tree, governments can verify that the additional power is not abused and that the administration is efficient. The main idea is to introduce economic considerations into the process of selecting and inspecting tax returns. By calculating the investment in the inspector's time at each stage (the taxpayers is likely to appeal), and the increase in revenue that will result, it is possible to calculate the minimum amount of tax evasion that justifies continuing with the audit — the shadow price of a tax inspector.

The administration can recommend that auditors only pursue a file if the tax increase is high enough to justify continuing the process. By equalizing the return per unit of time, the administration gives the same treatment to all taxpayers. If the guidelines are followed, the productivity of the inspectors will improve as well.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

77. Incentive Policies and Agricultural Performance in Sub-Saharan Africa

Bela Balassa

It has often been said that Sub-Saharan African countries do not respond to price incentives because of rigidities and inflexibilities in their economic structure. This is not the case, however, as this paper shows.

Exports in general, and agricultural exports in particular, are more responsive to price incentives in Sub-Saharan Africa than in developing countries as a whole. These are the results of an econometric investigation on the effects of real exchange rates on exports. It further appears that in Sub-Saharan Africa the impact of real exchange rates is greater on agricultural exports than on the exports of goods and services.

Within Sub-Saharan Africa, market-oriented countries generally gained, and interventionist countries lost, export market shares as the former, but not the latter, group of countries maintained realistic exchange rates and did not appreciably bias the system of incentives against exports. The differences in policies, and in export performance, are even greater if comparisons are made between private market economies and étatist countries in a three-fold classification scheme that puts some countries in an intermediate category.

These results are supported by the findings of a World Bank study on agricultural exports in Eastern and Southern Africa. According to this study, industrial protection and overvalued exchange rates adversely affected the exports of the region. Another Bank study has found that in Sub-Saharan Africa agricultural growth rates were higher in countries whose currency depreciated, than in countries whose currency appreciated, in real terms.

Kenya and the Ivory Coast exemplify market-oriented, and Tanzania and Ghana interventionist, countries in Sub-Saharan Africa. Pairwise comparisons between Kenya and Tanzania and between the Ivory Coast and Ghana have indicated the superiority of the market-oriented approach in promoting exports and agricultural production.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Norma Campbell, room S9-047, extension 33769.

78. Economists, Institutions, and Trade Restrictions: A Review Article

J. Michael Finger

Experts on international trade analyze the "new" rationale for trade intervention and conclude it is neither new nor rational.

Experts on the new economics of trade restrictions address such questions as:

Are there holes in the case for free trade? It is difficult to know when there is profit to be captured by trade intervention and difficult to design the appropriate trade intervention policy. A tariff will sometimes capture the foreign profit while a quota will give away the domestic, or vice versa, and as Gary Saxonhouse observes, "Capturing a strategic sector and its attendant economic rents may be very important for firm equity holders without being of much significance for the economy as a whole."

Why are trade restrictions imposed? Trade policy is often aimed at noneconomic objectives. About one sanction in three succeeds in its objective. Is this score good or bad? According to Stephen Krasner, "Since economic sanctions are likely to be used only when other policy instruments fail, this level of success is indeed surprising."

According to Rudiger Dornbusch and Jacob Frankel, "Net foreign demand is a more important determinant of protectionism than domestic demand." (Protection is provided mainly to offset losses of sales to foreign competition, not to compensate for losses attributable to an internal cause such as a shift of demand away from the product.)

How do U.S. policy actions and those of other nations interact? Says the reviewer: "The two principles of policy advice that this book brings forward, 'Rules, not discretion,' and 'Tit-for-tat retaliation,' could be used both to endorse most of the protectionist legislation submitted to the U.S. Congress in the past 20 years, and to indict the GATT as wrongheaded. This is probably a result of policy interpretations made for the convenience of analytical models rather than analysis fitted to the facts of policy."

Says the reviewer about the "us" these economists represent:

We produce a quality product.

We sell it very poorly.

We place self-destructively narrow limits on the topics we will analyze.

This paper is a product of the International Trade Division, International Economics Department. Please contact Nellie T. Artis, room S8-040, extension 33731.

79. Quantitative Appraisal of Adjustment Lending

Bela Balassa

Up to 1987, the average decline in the GDP growth rate in adjustment loan recipient countries was less than in the comparator groups. Similar results are obtained for per capita GDP.

This paper presents a quantitative analysis of adjustment programs in developing countries that received structural adjustment loans or sectoral adjustment loans (for short, adjustment loans) from the World Bank. The method applied has involved examining changes in various performance indicators following the receipt of the first adjustment loan, further contrasting the results with those for comparator groups of countries that did not receive adjustment loans.

At the same time, the loan recipient countries made an adjustment effort in the period following the first loan. To begin with, economic expansion was concentrated in the traded goods sectors, industry and agriculture, both of which experienced an improvement in the loan recipient countries relative to the comparator groups. Also, the growth of consumption declined substantially in absolute terms as well as relative to the non-recipient countries. In turn, an acceleration is observed in the growth of investment that holds the promise for future economic growth.

Furthermore, the average export growth rate fell less in the loan recipient countries than in the comparator groups and a much larger number of countries experienced an improvement than a deterioration relative to the non-recipients. The loan recipient countries also attained a substantial improvement in their current account balance position as their domestic savings ratios declined less than in the comparator groups. Finally, the loan recipient countries improved their relative position as far as external debt indicators are concerned.

Inflation, as measured by the consumer price index, decelerated in a majority of countries receiving adjustment loans vis-à-vis the comparators, although the average increased substantially due to hyper-inflation in Bolivia. In turn, money supply growth rates increased more in the loan recipient countries than in the non-recipient countries while real discount rates increase in the majority of the loan recipients. Finally, expenditure-GDP ratios increased less in the loan recipient than in the non-recipient countries.

Data have also been provided for loan recipients and non-recipients in Sub-Saharan Africa, low-income countries, lower middle-income countries, and upper middle-income countries. The results show that the relative position of loan recipients improved in three out of four country groupings in regard to per capita incomes, the exception being Sub-Saharan Africa.

The quantitative appraisal of adjustment programs thus points th the overall success of these programs. This conclusion is strengthened if use is made of weighted performance indicators, the weights being the number of times a country received an adjustment loan. Weighting improves the relative performance of the loan recipients in regard to practically all economic growth indicators, as well as for export growth, domestic savings, external debt, inflation, money supply growth, the real discount rate, and the government budget balance while little difference is shown in regard to the rest of the indicators.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Norma Campbell, room S9-047, extension 33769.

80. Emerging Issues of Privatization and the Public Sector

Samuel Paul

Privatization in developing countries has been modest, with little contracting out of services and a wide gap between plans and achievements — but the push for privatization has limited expansion of public enterprises.

Pressure to move toward privatization has mounted in the face of severe economic crises. Privatization in developing countries has focused almost exclusively on the divestiture of industrial and commercial enterprises, not public utilities or sectors characterized by monopoly. The pace of privatization has been slow and its impact modest. The reasons include the limited resources in the private sector (and popular resentment of foreign investors), the resistance of such important interest groups as labor unions, and the inability of many governments to prepare adequately for the complex tasks of privatization. But as a result of the push for privatization, or reprivatization (the divestiture of nationalized enterprises that were once private), some countries have resisted starting new public enterprises or expanding old ones. And some governments have encouraged joint ventures (with private partners, shareholders, or employees) to limit the flow of government funds and to make public enterprises more responsive to market pressures.

Among developing countries, divestiture has been most effective in Chile and Bangladesh. Africa has moved slower than Latin America. Many developing countries have preferred more informal liquidation of public enterprises — through "mothballing" and slow death (by denial of funds) — because it attracts less adverse publicity than outright divestiture.

Privatization tends to increase efficiency, but only if managers face a competitive rather than a monopolistic environment — which may require not only the sale of public enterprises but bidding for franchises, breaking up monopolies, and removing entry barriers.

Certain issues recur with privatization and the contracting out of services, particularly in the developing countries: the ways competition and ownership affect performance, the tension between multiple objectives (such as generating more cash yet lowering the price of shares to widen ownership), and the proper balance between the enterprise's autonomy and the government's role in regulating market power. The long-term benefits of privatization will not materialize if these issues aren't thought through.

Contracting out of services, an important feature of privatization in Britain and the United States, is rare in the developing world, with such exceptions as Argentina and the Ivory Coast. Contracting out, which is generally assumed to be simpler than privatization, is most effective when competition exists among suppliers, and when government is inexperienced at delivery of the services being contracted out but has incentives to pursue efficiency and is committed to overseeing the contractors.

This paper is a product of the Public Sector Management and Private Sector Development Division, Country Economics Department. Please contact Ernestina Madrona, room N9-061, extension 61711.

81. Reaching People at the Periphery: Can the World Bank's Population, Health, and Nutrition Operations Do Better?

Richard Heaver

How can field workers be expected to serve their most needy clients when program designers seldom try to identify and target these clients, understand their feelings and behavior, or monitor whether they are being reached?

Many population, health, and nutrition (PHN) programs are designed to elicit behavior changes in poor people living at the geographic and social peripheries.

Few programs specifically target the disadvantaged, however, and research about clients focuses mainly on routine statistics rather than on whether education and services do or will meet clients' needs.

The health sector, in particular, has little understanding of what clients feel and why they behave as they do. Yet this is precisely what PHN program designers must know to increase acceptance of public health services among clients most inclined toward early mortality and least likely to accept family planning.

PHN program design should be reoriented to:

• Learn about clients' perceptions and behavior.

• Target the clients most in need of services.

• Give public sector providers of service stronger financial and nonfinancial incentives to understand and reach out to clients.

• Make more use of private or community-based delivery systems that are responsive to client needs.

• Carry out more studies that evaluate program responsiveness to clients.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, Room S6-065, extension 31091.

82. Microeconomic Theory of the Household and Nutrition Programs

Dov Chernichovsky and Linda Zangwill

Whether a nutrition program works depends on whether, and how, individual households make use of it.

Lack of food is no longer the major cause of malnutrition. Many households and individuals remain malnourished when income and supplies of food are inadequate. Nutrition policy and programs must be based on sound knowledge of household behavior patterns. Any increase in household resources, whether through policy programs or through growth and development, stops at the household. The family can allocate the added resources in any way it sees fit — and often does so in ways that are incompatible with better nutrition and related goals.

Taboos about introducing solid foods for infants and appropriate foods during pregnancy and nursing do not change because there is more food in the house. The "shadow" price of food, at the household level, involves such considerations as whether family members understand the nutritional value of foods; are better off selling than eating the food they grow; value time spent earning income more than time spent preparing food or breastfeeding infants (and hence turn to processed foods and bottle feeding); or experience a psychological cost in eating certain foods (as Jews or Moslems would in eating pork, for example).

The microeconomic theory of the household focuses on the household's decisionmaking about scarce food resources based on such considerations as:

• The size of the family.

• The purchasing power of the family.

• The availability of healthful foods.

• The family's food preferences.

• Environmental variables (such as ethnic traditions and the homemaker's level of education).

• Family health (disease can limit the absorption of nutrients).

Such determinants should be monitored to anticipate malnutrition problems unrelated to food supplies.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

83. Welfare Costs of U.S. Quotas on Textiles, Steel, and Autos

Jaime de Melo and David Tarr

Protectionism is popular but costly: the United States loses $21 billion a year in welfare costs through quotas on textiles, steel, and autos.

Nontariff barriers prevent a transition to the realities of international competition, and their welfare costs are huge.

The United States loses an estimated $14 billion a year in revenues through rents lost to exporting countries through export quotas. Add another $7 billion for distortionary costs.

Removing the remaining tariffs (an average 3.5 percent in 1984) would produce a welfare gain of about $0.9 billion — for a net benefit of $105 billion, measured in terms of the discounted value of displaced workers' lost earnings over a lifetime.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-069, extension 61539.

84. Black Markets for Foreign Exchange, Real Exchange Rates, and Inflation: Overnight versus Gradual Reform in Sub-Saharan Africa

Brian Pinto

Inflation could rise permanently and substantially as a result of unifying official and black market exchange rates, even if real government spending remains constant.

The black market foreign exchange premium is an important implicit tax on exports, creating a conflict between the fiscal goal of financing government spending with a limited menu of tax instruments and the allocative goal of stimulating exports. The premium is solved for in a model that includes the portfolio balance approach to exchange rates, dual exchange markets, and seignorage for financing the fiscal deficit.

The steady-state and dynamic implications for inflation of floats as a vehicle for unifying official and black market rates are then analyzed. Inflation could rise substantially in the new steady state as the lost revenue from exports is replaced with a higher tax on money. Further, the conditions under which undershooting or overshooting occur are parameterized.

The paper is motivated by and illustrated with recent examples from Sub-Saharan Africa.

This paper is a product of the Trade Policy Division, Financial Operations Department. Please contact Sheila Fallon, room N8-061, extension 61680.

85. Wage Responsiveness and Labor Market Disequilibrium

Ramon E. Lopez and Luis A. Riveros

Core unemployment may not affect market wages; transient unemployment does. Policymaking should reflect the distinction.

Core unemployment corresponds to the structural and natural components of open unemployment, while transient unemployment is associated with the labor market impact of cyclical fluctuations.

Core unemployment may not significantly change market wages because it is associated with distortions in the labor market, a mismatch between jobs and workers, and normal turnover.

Core unemployment has persisted in Colombia, which has one the highest unemployment rates in Latin America.

Argentina, which has the lowest unemployment rate in Latin America, experiences relatively higher cyclical employment fluctuations.

Wage policies would be less effective in improving the labor market in Colombia than microeconomic policies — including measures to deregulate the labor market, reduce the wage gap between the formal (protected) and informal (unprotected) sectors, increase labor mobility, and provide more training or job information.

Stabilization and other policies to induce wage flexibility are more appropriate for dealing with cyclical unemployment.

This paper is a product of the Debt and Macroeconomic Adjustment Division, Country Economics Department. Please contact Luis A. Riveros, room N11-061, extension 61762.

86. External Balance, Fiscal Policy, and Growth in Turkey

Ritu Anand, Ajay Chhibber, and Sweder van Wijnbergen

How did Turkey — alone among high-debt countries — sustain high real growth after rescheduling its debt? Can it continue on a high growth path and manage its external debt?

Since Turkey rescheduled its debt, its real GNP has grown 5 percent a year — compared with an average 1.2 percent for other high-debt countries.

How did Turkey translate the extra breathing space it got from foreign financing into sustained high real growth?

Turkey's financing needs for large public sector deficits generated high medium-term inflation and high real interest rates. But the thrust of Turkey's program was to keep savings and interest rates up and to improve export performance.

Turkey's well-directed public expenditure program supported the private sector through key investments in infrastructure, special incentives, and credit for export and investment.

Turkey also inherited substantial excess capacity from heavy investment made in the 1970s. This allowed for a quick improvement in output and exports once the exchange rate was aligned.

External debt does not threaten Turkey's creditworthiness. Internal adjustment is necessary for consistency with inflation targets, but tighter external policies are both unnecessary and potentially damaging to Turkey's growth prospects and internal balance.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ajay Chhibber, room N10-055, extension 60102.

87. Vocational and Technical Education in Peru

Peter Moock and Rosemary Bellew

Peruvian vocational and technical students often end up working in the same jobs for the same earnings as academic *students — probably because teaching in both streams is largely "chalk and talk" and vocational and technical education students get little "hands-on" technical experience in school.*

The costs of the academic and the vocational and technical education (VTE) streams in Peru are very close. What's more, the monetary returns to, and occupational profiles of, graduates of the two streams are almost identical — with one exception.

For the self-employed who live in urban areas outside Lima, the returns to secondary technical education are significantly lower than the returns to secondary general education. This may be because the quality of VTE programs for urban students outside Lima is generally lower than the quality of education for academic students in the same areas.

Why, for other groups, do the two educational streams produce almost identical returns and graduates with similar occupational profiles? VTE institutions, funded at the same level as academic institutions, can't afford the inputs that make VTE genuinely technical, so the students get little "hands-on" technical experience in school. Despite declared differences in emphases and goals, programs and curricula in the two streams are substantially alike — largely "chalk and talk."

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact C. Cristobal, room S6-001, extension 33648.

88. Costs, Payments, and Incentives in Family Planning Programs

John A. Ross and Stephen L. Isaacs

Countries differ in whether they charge clients for different forms of birth control, offer them free, reward people for using them, or penalize people for not using them.

Governments in developing countries — concerned about rapid population growth and the rising costs of family planning programs — face difficult ethical and practical considerations in deciding how to recover costs yet stimulate family planning.

Policies vary widely. Sri Lanka, for example, charges for pills and condoms, offers IUDs and injectables free, and pays the acceptor for sterilization.

Pakistan and the Republic of Korea charge for resupplies of pills, condoms, and spermicide and pay the acceptor for sterilization. Bangladesh and Nepal give resupply methods free and pay the acceptor for sterilization (and, in Bangladesh, for using the IUD).

Turkey, on the other hand, charges for sterilization but provides IUDs, pills, condoms, and diaphragms free. Jordan charges for the IUD and offers the pill free.

Some countries offer community incentives for achieving family planning goals. Some offer families incentives for remaining small. Several countries, especially in Asia, impose penalties on families that exceed the norm.

What practical and ethical considerations shape these policies? This paper reviews current practices and policies in developing countries and considers the ethical issues that each kind of incentive and disincentive raises.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

89. Export Quota Allocations, Export Earnings, and Market Diversifications

Taeho Bark and Jaime de Melo

Countries adopting voluntary export restraints (VERs) often choose a two-tier quota allocation system, with extra sales to the nonrestricted market at below marginal costs. One result may be the recent increase in antidumping cases.

Countries adopting voluntary export restraints (VERs) often adopt a two-tier export quota allocation system. This system involves a "basic" allocation to the restricted market and an "open" allocation to the nonrestricted market — analogous to sales in one market financing sales in another market.

The two-tier system allows the flexibility required to diversify exports in nonrestricted markets, while fulfilling the established quota in the restricted market. This diversification exacts a cost because it results in extra sales at below marginal cost.

A rationale for pursuit of the two-tier system can be found in the recent history of VER negotiations, in which discussions of VERs between two major trading partners spread to other trading partners as well.

The recent increase in antidumping cases may in part be associated with the adoption of two-tier quota allocation systems.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-069, extension 61539.

90. A Framework for the Analysis of Mineral Tax Policy in Sub-Saharan Africa

Robert F. Conrad and Zmarak M. Shalizi

Overreliance on production sharing and resource rent taxes can expose small, open economies that are neither diversified nor wealthy to unacceptable risks and fluctuations in revenue.

Overreliance on production sharing and resource rent taxes can expose small, open economies that are neither diversified nor wealthy to unacceptable risks and fluctuations in revenue.Given the dual role played by the government as resource owner and tax collector in many Sub-Saharan economies, it is important to separate "resource factor payments" from taxes through the use of different instruments. The instruments to be considered are:

- A factor payment system that includes "ad rem" or "ad valorem" royalties. Production sharing, resource rent schemes, and fixed fees could also be used, but *some form of unit payment is necessary* and justified, because natural resources in the ground are inputs into the production process. Determined in a reasonable manner, such a royalty would signal the opportunity cost of extraction and development, capture the "natural resource rent" and offer an acceptable level of risk to the country.
- A cash-flow and withholding-tax system, initially for the mineral sectors and eventually for other sectors of the economy. The cash-flow tax would capture a share of the "economic rent" from each sector and be neutral across sectors. The withholding system would enable application of an income (as opposed to a consumption) tax base at the individual

level.

• A depletion account to preserve the economy's capital stock. Natural resources are part of an economy's capital stock, which will fall unless "replacement investment" is made as the resource is depleted. To ensure adequate saving for this "replacement investment," the account can be funded by the value of depletion each year, equal to the minimum amount necessary to keep the aggregate capital stock constant.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

91. Israel's Stabilization Program

Nissan Liviatan

A disinflation strategy that involved eliminating the fiscal deficit and changing the rules of the government-labor game reduced inflation in Israel from more than 400 percent a year in 1984 to a low 20 percent a year in the third year of the program.

A disinflation strategy that involved eliminating the fiscal deficit and changing the rules of the government-labor game reduced inflation in Israel from more than 400 percent a year in 1984 to a low 20 percent a year in the third year of the program.

The stabilization program Israel launched in July 1985 combined orthodox fiscal and monetary policies with a heterodox incomes policy.

The orthodox elements included a sharp reduction in the fiscal-operational deficit — 8 percent of GNP in the first six months — and tight monetary policy.

The heterodox element was to freeze wages and prices and peg the exchange rate to the U.S. dollar. Wage and price controls were relaxed in 1986 and 1987, leaving exchange rate policy (later pegged to the basket of currencies) as the anchor in the new system.

The national coalition government succeeded in neutralizing pressures for deficit spending. Under government pressure, employers' organizations and organized labor reached a wage agreement in July 1985 that prevented substantial unemployment. This approach — not intended for use in normal times — proved effective in administering shock treatment.

The result? At the end of the program's third year, inflation is running a low 20 percent annually, compared with more than 400 percent in 1984.

Whether stabilization will survive the November 1988 elections remains to be seen.

The stabilization programs in Argentina (in 1985) and Mexico (in 1988) were similar in the initial stages to Israel's.

This paper is a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department. Please contact Nissan Liviatan, room N11-063, extension 61763.

92. A Model of Cocoa Replanting and New Planting in Bahia, Brazil, 1966-85

Pravin K. Trivedi

In Brazil, two decades of high cocoa prices and low interest rates sparked significant growth in new planting of cocoa trees. Higher prices and low interest rates encouraged new planting; but higher prices discouraged replanting in the short term while encouraging it in the long term.

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In 1966, 90 percent of the cocoa growing areas in Bahia, Brazil had trees more than 30 years old. By 1985 most of the area had been replanted or supplied with new trees.

Throughout most of this period there were high or rising cocoa prices — and zero or negative interest rates. High prices and low interest rates directly encouraged new planting, but their relationship to replanting is more complex. In the short term, higher prices discourage replanting, which involves uprooting and a temporary loss of revenue. But over the long run, higher prices increase expectations of future profits and encourage replanting.

Lowering the interest rate below its real level provided cocoa growers with a subsidy that encouraged both replanting and new planting.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Dawn Gustafson, room S7-044, extension 33714.

93. The Effects of Education, Health, and Social Security on Fertility in Developing Countries

Susan H. Cochrane

In most countries, spending on family planning programs is more directly effective for reducing fertility than spending on any other individual service. Education, health care, and social security programs may also help to reduce fertility, but their impact differs from country to country, so the spending mix on these programs should be highly country-specific.

Spending on education does not automatically reduce fertility.

In most countries, spending on family planning programs is more directly effective for reducing fertility than spending on any other individual service. Education, health care, and social security programs may also help to reduce fertility, but their impact differs from country to country, so the spending mix on these programs should be highly country-specific.

Fertility tends to increase, for example, with small amounts of education before falling off at the level of completed primary school. Fertility responds more strongly to female than to male education, and more strongly to education in urban than in rural areas. The specific effect can be measured only by looking at a particular population group.

Health care services that reduce child mortality also reduce fertility when life expectancy reaches a level where couples anticipate the need for fewer children. This differs from society to society and, in general, is a more costly way to reduce fertility than family planning.

The general effect of social security systems on fertility is more difficult to study and to quantify. A preliminary estimate, however, shows it to be the most costly method, compared with education, health care, and family planning.

The cost of averting births, for most countries, appears to be lowest when policy emphasizes family planning. The mix of other programs depends on the country.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

94. The World Bank's Population Lending and Sector Review

George Simmons and Rushikesh Maru

The Bank has established a population policy dialogue with governments — and has successfully differentiated its population activities in different areas of the world. But the Bank's efforts to translate population policy goals into effective programs and projects have been far from successful.

The Bank has established a population policy dialogue with governments — and has successfully differentiated its population activities in different areas of the world. But the Bank's efforts to translate population policy goals into effective programs and projects have been far from successful.

The Bank's decision to target its efforts to "key" countries — such as Kenya, India, and Bangladesh — has proven basically correct. In recent years, the Bank has considerably increased its lending, number of projects, and attention to new areas, especially Africa. In many countries, however, fertility remains high.

The Bank has been more successful in developing policy and creating programs than in running effective projects.

Projects have been commonly run through ministries of health with little regional variation or autonomy and minimal roles for nongovernmental organizations (NGOs) and the private sector. Built-in evaluation has not always been present, and postcompletion evaluation has been late. As a result, projects have not been able to recognize and respond to specific and changing needs, and follow-up projects have been unable to take into account findings of project completion evaluation.

The Bank should be able to improve projects by:

- Developing stronger links with a range of government agencies and NGOs.
- Focusing more attention on institutional development and sustainability.
- Emphasizing smaller, less complex projects with more flexible and innovative designs.
- Shortening project cycles so that mistakes can be avoided as new projects are developed.

The Bank should reassess its reliance on supervisory missions for project monitoring and consider greater use of resident specialists for constant guidance. The Bank should also consider developing a systems approach to project evaluation and schedule more regular project reviews. The Bank needs, in addition, to increase its coordination with other international donor agencies and with private voluntary organizations.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

95. International Trade and Imperfect Competition Theory and Application to the Automobile Trade

Junichi Goto

The real world economy is much less competitive than an economics textbook assumes, especially for automobiles.

This paper develops a formal general equilibrium trade model for imperfect competition, a model easily applied to actual situations. Starting from the Krugman-Dixit-Stiglitz framework, the model incorporates labor market imperfection and variable elasticity of substitution between differentiated products.

The real world economy is much less competitive than an economics textbook assumes, especially for automobiles.

The model shows that, in the long run, international trade brings about five gains:

- *Greater variety in consumption.* Consumers can enjoy a wider selection of goods through the introduction of foreign goods.
- *Efficiency in product markets.* Monopolistic power of domestic producers is weakened by foreign competition.
- *Technical efficiency.* The unit cost of production is reduced by foreign competition and by further use of increasing returns to scale technology.
- *Decline in structural unemployment.* Contrary to popular belief, foreign competition reduces unemployment in the long run by rectifying labor market imperfections.
- *Contribution to economic growth.* International division of labor encourages savings in fixed costs, and the saved capital resources can facilitate economic growth.

The model is also applied to the U.S. automobile trade in 1986 to estimate the magnitude of the five effects. The results suggest that the cost of trade restrictions is high because the restrictions further increase the imperfect competition in the American auto industry.

The model is general enough for the analysis of many industries in both developed and developing countries.

This paper is a product of the International Trade Division, International Economics Department. Please contact Jean Epps, room S8-037, extension 33710.

96. The Private Sector and Family Planning in Developing Countries

Maureen A. Lewis and Genevieve Kenney

In harnessing the private sector to provide more family planning services to both middle and low income people, governments can use incentives to stimulate private sector investment and can ensure quality control through regulation.

In harnessing the private sector to provide more family planning services to both middle and low income people, governments can use incentives to stimulate private sector investment and can ensure quality control through regulation.

The private sector might meet more of the demand for contraception, thereby reducing government's subsidies for contraception.

The private sector is already involved in many facets of family planning — from research and development to production and to distribution and delivery. It is the major source of contraceptive resupply methods (oral contraceptives and condoms) in most countries. And it is an important source of more permanent methods (sterilization and IUDs) in a few countries.

Some public efforts have been exerted to harness and collaborate with the private sector. These include incorporating family planning with employee health benefit packages (the most common experience), social marketing projects (where a subsidized contraceptive is distributed through commercial channels), and stimulants to private sector investment in family planning.

Few of the experiments have been

evaluated, but some arrangements appear to be appropriate and effective in raising contraceptive prevalence. Moreover, steps could be taken to improve and expand the methods that donors and national governments adopt to promote greater private sector investment in family planning service delivery.

Clearly needed is an evaluation of existing programs and projects. More needs to be known about what determines consumer reliance on private as opposed to public sector sources of services, the cost and cost-effectiveness of different interventions, and the limits of the private sector in meeting contraceptive demand.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

97. Subsidies

Richard H. Snape

Allegedly subsidized exports from developing countries are targets for countervailing import tariffs. But what are export subsidies? Should they be of concern?

Only when the United States started experiencing tough competition in world markets did the questions of fair trade and export subsidies move to center stage in the international trade discussions. But is "fair trade" a will-o'-the-wisp?

The 1970s Tokyo Round of multilateral trade negotiations produced a Subsidies Code. But neither subsidies nor countervailing actions have been constrained to the extent that negotiators of the code hoped. The code has evoked discord, partly because "export-promoting subsidy" is so difficult to define.

The United States has been the chief implementer of countervailing duties (CVDs) — many of them viewed as a form of harassement by foreign exporters, particularly of manufactured products. Few CVDs have been targeted at the United States where — as in Europe — the most subsidized exports are agricultural exports that injure industries not in the importing countries but in other agricultural exporting countries.

Alternative approaches to that of the Subsidies Code are:

- Ignore domestic subsidies in exporting countries and focus only on export subsidies.
- Ignore the distinction between fair and unfair foreign competition and place all industry safeguard actions on one track.
- Attack import barriers, not subsidies, for without barriers to imports the extent of assistance tends to be limited by transparency and by fiscal considerations.

This paper is a product of the office of the Research Administrator. Please contact Jane Sweeney, room S13-131, extension 31021.

98. Diversification in Rural Asia

Agriculture and Rural Development Staff

The challenge to agriculture in East Asia is to sustain rice farming while expanding into a more flexible, diverse agriculture. The task for aid agencies will be to come up with suitable analytical skills and technical knowledge for the switch from commodity-based project lending to broader sectoral support.

As a result of the declining contribution of rice-based farming in East Asia, investment in agriculture must diversify to maintain rural incomes.

In the short term, East Asian countries should (1) diversify toward crops for which there is a promising market (fruits, vegetables, and livestock products rather than sugar, rubber, coconuts, and palm oil) and (2) expand small-scale industry, marketing, and construction in rural areas.

Long-term needs include sustained research on crop and livestock technology with an eye to developing:

- Higher yielding secondary food crops.
- Better integration of livestock and crop production.
- More flexible irrigation and drainage systems (current rice irrigation systems being suited only to rice).
- Improved technology to lower the cost of production.

The policy dialogue should focus on key questions. How do different crops and livestock interact to affect overall output? What are the costs of various combinations? How can the need for farm and regional specialization and cooperation between small farmers be balanced with the broader need for flexibility?

Rather than focus on narrow issues — such as the costs of protecting rice farmers — or take a "pick-the-winner" approach to diversification, the Bank should help:

- Create an overall policy environment that encourages more flexible and broader cropping systems rather than commodity-support programs.
- Design laws and institutions that facilitate efficient marketing by establishing grades and standards for different commodities and developing and distributing farm inputs.
- Stimulate public investment in physical and social infrastructure, communications, and information systems.
- Develop a rural financial system that mobilizes rural savings, makes credit available to traders, and diversifies the rural economy.
- Assess rural training and education systems and their capacity to prepare rural people for nonagricultural jobs.

This paper is a product of the Agriculture Production and Services Division, Agriculture and Rural Development Department. Please contact Shawki Barghouti, room J2-071, extension 38408.

99. Trade Policies and the Debt Crisis

Sam Laird and Julio Nogues

The highly indebted countries have been removing their trade barriers but creditor nations are increasing them. This makes it harder for the indebted countries to export more and to service their debts.

In the early 1980s, faced with a mounting debt crisis, most highly indebted developing countries increased trade barriers to generate more foreign exchange — but in the last three to four years, they have reversed course.

Almost all highly indebted countries have undergone real devaluations and many have undertaken significant liberalizations, so much so that some countries (Bolivia, Jamaica, Uruguay, Mexico, Morocco, Costa Rica) are less protectionist than before the debt crisis.

But industrial countries have imposed new nontariff barriers against imports from highly indebted countries. Canada, Australia, the EEC, and the United States have greatly increased the use of countervailing duties and antidumping actions.

Industrial countries' export subsidies have contributed to lower prices for beef, sugar, and grains — which are important exports for several highly indebted countries. Industrial countries have also recently imposed stricter import quotas and pressured highly indebted countries to accept additional "voluntary" export restraints.

In general, highly indebted countries remain more protectionist than industrial nations. But growing protectionism in the industrial nations makes it more difficult for highly indebted countries to pay off their debts, and ultimately rebounds on creditor governments and banks.

This paper is a product of the International Trade Division, International Economics Department. Please contact Salome Torrijos, room S8-033, extension 33709.

100. Public Infrastructure and Private Sector Profitability and Productivity in Mexico

Anwar Shah

Microeconomic analysis of Mexican industry shows additional investment in public infrastructure produces only a small increase in output. This suggests that the policy emphasis in Mexico should be on the better upkeep of existing infrastructure to ensure the continuity of public services rather than on new capital investment.

This paper specifies a microeconometric model (a restricted equilibrium framework) to estimate the impact of investment in public infrastructure on private industrial profitability. Empirical results based on time series data for 34 industries characterize the Mexican industrial structure as having involuntary unemployment, deficient product demand, declining productivity growth, increasing returns to scale, and short-run excess capital capacity. Aggregate technological change over the period studied has been capital using and labor saving.

Both labor and capital are underused in the short run. This disequilibrium has high efficiency costs that may be undermining Mexico's international competitiveness.

The long-run multiplier effect of public infrastructure on output as measured by the output elasticity of public infrastructure is positive but small. Since public infrastructure is also observed to have a small degree of complementarity with both capital and labor, better upkeep of the existing infrastructure would help improve the functioning of labor and product markets in Mexico.

From the private sector's perspective, however, the long-run productivity of private capital is much higher than the productivity of public capital. Therefore, new capital investment in the public sector is not recommended at this time and should be undertaken only to rectify any identified constraints imposed by the inadequacy of infrastructure in the private employment of private factors.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

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101. Measuring the Impact of Minimum Wage Policies on the Economy

Luis A. Riveros and Ricardo Paredes

Traditional statistical techniques probably underestimate the negative effects of protective wage regulations on young and unskilled workers — who should be getting training, not minimum wages.

Our knowledge about the harmful effects of minimum wage regulations has been strongly influenced by statistical evidence from the industrial countries — which is often based on indirect estimates that do not take into account the many "discouraged job seekers" who withdraw from the labor force (and statistical samples) because of minimum wage regulations. Minimum wage regulations are probably more harmful than economists have assumed them to be.

Government regulation of the minimum wage is most likely to limit the job prospects of young and uneducated or unskilled workers. Proportionately fewer women than men are affected by the minimum wage because women withdraw from the labor force and remain unemployed — or work in the informal sector and productive activities not accounted for in labor statistics.

Minimum wage regulations should probably not apply to young or unskilled workers or apprentices. It is less important to guarantee unskilled workers a minimum wage and more important to provide them with training that will increase their chances of rising above the need for wage protection.

This paper is a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department. Please contact Raquel Luz, room N11-057, extension 61762.

102. Effects of the Multifibre Arrangement on Developing Countries — A Survey

Junichi Goto

The Multifibre Agreement (MFA), the most important restriction on textile and clothing exports, has damaging effects on many less developed countries, both in the short and long run.

The MFA consists of bilateral quotas against textile and clothing exports from developing countries. It thus derogates two GATT principles: nondiscrimination and the avoidance of quantitative restrictions. Despite this derogation, the MFA is administered under the auspices of GATT.

The primary purpose of the MFA is to restrict LDC shipments of textiles and clothing. Although the MFA quotas cost the consumer in importing countries a great deal, they save (or create) few jobs. The quotas are therefore a poor way to protect workers from foreign competition.

The MFA has a strong impact on LDCs in the short run for the following reasons:

- The forgone export revenue of LDCs, partly offset by the transfer of quota rents, is huge.
- Since individual quotas under the MFA are imposed on selected (often efficient) exporting countries, unrestricted (inefficient) countries may be able to increase their shipments at the expense of restricted countries. The MFA affects the pattern of trade.
- Since the MFA puts a cap on the quantity (not the value) of shipments, it encourages the upgrading of goods.

The MFA also has an impact on the economic development in the long run. On the positive side, attempts to evade MFA quotas stimulate foreign investment from restricted suppliers, like Hong Kong, to nonrestricted countries. Investments to less restricted regions have helped economic development of countries in Asia (and perhaps to less extent in Latin America and the Caribbean).

But the MFA discourages countries from becoming "too successful." For example, when Bangladesh showed success in clothing exports with the help of a Korean company, the developed countries negotiated bilateral restrictions with the poorer country. Thus the MFA tends to maintain the present configuration of textile and clothing trade — and therefore discourages dynamic shifts in trade based on comparative advantage.

This paper is a product of the International Trade Division, International Economics Department. Please contact Jean Epps, room S8-037, extension 33710.

103. Industrial Portfolio Responses to Macroeconomic Shocks — An Econometric Model for Developing Countries

James R. Tybout and Taeho Bark

Rapid changes in the exchange rate significantly affect leverage and liquidity in the corporate sector.

Under what macroeconomic conditions are industrial growth and financial stability — or disaster — most likely in a semi-industrial country?

The question is addressed using an econometric model with the following features. Each firm's net income is a function of macroeconomic variables (such as output demand and interest rates) and firm-specific factors (such as physical asset shocks, currency exposure, and overall indebtedness). Each firm retains some portion of its income — how much depends on dividend policy and past earnings performance. Retained earnings add to net worth and are distributed among specific assets and liabilities according to the same macroeconomic and firm-specific variables. These incremental additions to assets and liabilities set the stage for the next period's adjustment behavior.

Application of this model to Uruguayan raw data yielded these basic findings:

- Corporate income is very sensitive to output demand and the cost of dollar credit.
- Fluctuations in corporate income have a clear, direct effect on the rate at which net worth expands.
- Firms absorb most short-run fluctuations in net worth by adjusting assets, not debts.
- Corporate demand for peso credit is very unresponsive to the real peso interest rate.

The findings imply that rapid changes in the exchange rate or aggregate demand significantly affect leverage and liquidity in the corporate sector.

This paper is a product of the Trade Policy Division, Country Economics Division. Please contact Carla Cabana, room N8-065, extension 61539.

104. Economic Effects of Financial Crises

Manuel Hinds

The financial systems in financially distressed countries should be restructured so that banks can acknowledge and allocate losses rather than protect inefficient companies — thereby throwing good money after bad.

Confronted with a financial crisis, governments in many developing countries protect their banks from bankruptcy by allocating resources to the least efficient debtors—loss-making firms whose bankruptcy would lead to the failure of the banking system. This crowds out efficient activities that could lead to economic recovery.

Such misallocations of resources, and the destabilizing macroeconomic forces they generate, will delay economic recovery until losses are allocated in a way that mimics bankruptcy processes.

The financial system should be restructured to curtail (through writeoffs and recapitalization) the dependence of banks on their bad borrowers. Banks and their depositors (or an important subset of them) should be protected to avoid the monetary effects of a banking panic. But bank shareholders and managers should take their share of the losses — the shareholders by losing their investment (through writeoffs) and the managers by being removed from their positions.

Restructurings of banks should be used to bring about restructuring in the real sector: the failure of unviable firms (by foreclosing on the collateral and selling off assets) or the forced restructuring of troubled but viable firms.

This paper is a product of the Trade and Finance Division, Europe, Middle East, and North Africa Department. Please contact Luz Hovsepian, room H9-065, extension 32979.

105. Securing Access to International Markets

Richard H. Snape

Much of the action in international trade negotiations is bilateral or otherwise discriminatory, including action under GATT auspices. Does this threaten multilateralism and market access for small trading companies?

The unconditional extension of the fruits of trade negotiations under the General Agreement on Tariffs and Trade is giving way to bilateral and other discriminatory trade agreements. Led by the United States, GATT has taken a strong position against discrimination: the benefits of negotiations under GATT generally have been extended to all contracting parties without specific conditions or reservations. This unconditional extension of benefits — the unconditional most-favored-nation principle (MFN) — is now under considerable pressure.

Supporters of conditional MFN point out that it ensures reciprocity and, by discouraging foot-dragging and free-riding, encourages negotiation. On the other hand, advocates of unconditional MFN argue that it ensures that the benefits of negotiations are not wasted, that it simplifies administration of trade barriers, reduces friction between nations, protects the small and weak, and facilitates the development and preservation of a multilateral trading system.

Although the United States has pursued nondiscriminatory trade pacts since 1923, Washington has in a recent turnaround pursued preferential trading arrangements, promoted forms of conditional MFN, and sought discriminatory treatment for some of its exports and imports. No nondiscriminatory leadership has emerged to replace that of the United States.

The threat to multilateralism and small traders will be reduced if:

- New trade-liberalizing "clubs" that are formed in the Uruguay Round, or elsewhere, are open to new members on the same terms that apply to the founders.
- Compliance with the rules of such clubs is determined multilaterally and not unilaterally by any existing members.
- Markets that are levered open are opened in a nondiscriminatory manner.
- Preferential trading arrangements conform to the relevant GATT rule — Article XXIV.
- The main safeguard provision of GATT (Article XIX) remains nondiscriminatory.

This paper is a product of the Research Administrator's Office. Please contact Jane Sweeney, room S13-131, extension 31021.

106. Energy Issues in the Developing World

edited by Mohan Munasinghe and Robert J. Saunders

Lower oil prices are raising doubts about the underlying assumptions and ambitious energy programs of the last decade. How — and how hard — do countries pursue the goal of energy efficiency in an uncertain energy market.

The developing world still needs large amounts of capital to meet its ever-expanding energy requirements. In most countries, these capital requirements are a big part of the total investment plan. The problems of debt and public revenues make the pursuit of efficiency as important a goal under declining fuel prices as it was under rising fuel prices. Other issues are less clear.

In an era of uncertainty, how do oil-importing countries decide whether to pass savings along to the consumer in lower oil prices or (considering the debt crisis) to treat them as windfall revenue gains? Reducing energy prices is relatively easy, but raising them has historically presented problems. What happens when international prices go up again?

What strategies should such non-OPEC oil-exporting countries as Malaysia, China, and Mexico adopt to offset export losses?

How do developing countries decide whether to invest in further oil and gas exploration or in alternative fuels, and how much should the Bank support them? what should be done with white elephant projects?

How do governments arrive at a productive partnership between the public and private sectors?

What will happen in poorer developing countries that cannot bear the high capital costs of investing in fuel-switching capabilities yet otherwise remain vulnerable to sudden fluctuations in fuel prices?

How do decisionmakers assess the risks of energy investments in an uncertain energy market?

This paper, a product of the Energy Strategy, Management, and Assessment Division, Industry and Energy Department, has also appeared as an Industry and Energy Department Working Paper. Please contact Mary Fernandez, room S4-037, extension 33637.

107. A Review of World Bank Lending for Electric Power

Mohan Munasinghe, Joseph Gilling, and Melody Mason

More people worldwide have access to electric power — but the overall performance of sector utilities is deteriorating. Bank lending should place greater emphasis on improved economic, financial, and managerial efficiency.

A review of about 300 power projects financed by the World Bank and IDA between 1965 and 1983 shows a declining trend in sector performance. More people have access to electric power, and more kilowatt hours are generated per capita, but overall sector performance has declined, while the quality of service is poor and shows no signs of improving.

Therefore in its operations, the Bank should put more emphasis on:

- Making energy production and allocation more efficient (supplying electricity at the lowest cost and basing prices on real marginal costs) rather than using the supply of power to meet other goals such as social equity.
- Increasing incentives to make utilities more efficient and productive.
- Encouraging sector restructuring and institutional reform, including greater private participation, to improve the social compact between government, consumers, and the electric utility.
- Evaluating power projects with better understanding of power, energy, sector, and national economic linkages.
- Striking a better investment balance between power generation and distribution.
- Improving the quality of existing services (and reducing losses) through rehabilitation and maintenance — rather than by simply expanding the system.
- Providing service on a priority basis to the productive sectors, such as industry and (when economically justified) agriculture.
- Using more risk and sensitivity analysis, and more scenario-oriented "what-if" treatment of uncertainty in project preparation work rather than at appraisal.
- Setting more realistic targets for physical and financial performance and clearer identification of constraints on meeting those targets.
- Developing a better institutional memory for project data.

This paper, a product of the Infrastructure and Energy Operations Division, Latin America and the Caribbean Department, has also appeared as a Industry and Energy Department Working Paper. Please contact Mary Fernandez, room S4-037, extension 33637.

108. How to Collect Data on Household Energy Consumption

Josef Leitmann

Energy policy and activities should be based on accurate data about how households acquire and use energy — and such data is best acquired at the household level.

This paper presents guidelines for administering household energy surveys.

Typically, country energy balances, national budget surveys, and microstudies have been the source of information about residential energy consumption. A dedicated nationwide household energy survey will generate more relevant data for planners, policymakers, and evaluators — but may overturn assumptions in the process.

The subsidized promotion of liquefied petroleum gas (LPG) as a charcoal substitute in Senegal, for example, was based on the assumption that subsidies alone would lead to widespread adoption of butane fuel and that as the use of butane increased, the use of charcoal would decline. But a 1987 survey indicated that although 65 percent of the households in Dakar have LPG stoves, only 2 percent use the fuel exclusively. And in the households that use both LPG and charcoal, consumption of charcoal has not changed.

In Niger, wealthy residents, because of their lifestyle and income, were considered the logical market for modern fuels. But a 1986 study indicate that they used alot of wood because they could afford to buy it in bulk (which made it the cheapest fuel) and they suffered none of the health or other disadvantages of wood fires because their servants did all the cooking.

This paper, a product of the Industry and Energy Department, has also appeared as a Industry and Energy Department Working Paper. Please contact Janine Littleford, room S2-274, extension 33627.

109. Improving Power System Efficiency in Developing Countries Through Performance Contracting

Philip Yates

Utilities in developing countries may want to consider a successful new approach to improving performance: engaging a performance contractor to improve their operations — in exchange for a share of the savings. The utility, in turn, fulfills its own performance contract with the government — getting more autonomy in exchange for better performance.

In the United States, some large industrial and commercial energy users have successfully used energy performance contractors to effect energy savings in exchange for a share of the savings.

In some developing countries, governments have considered various forms of government/utility performance contract, whereby the governments give the utilities more flexibility and autonomy in exchange for better performance.

Why not merge the two concepts?

A utility could engage a performance contractor to improve operations in exchange for a share of the savings — thereby allowing the utility to fulfill its performance contract with the government. The government would give the utility more autonomy in exchange for better performance.

This paper, a product of the Industry and Energy Department, has also appeared as an Industry and Energy Department Working Paper. Please contact Mary Fernandez, room S4-037, extension 33637.

110. Impact of Lower Oil Prices on Renewable Energy Technologies

Ernesto Terrado, Merle Mendis, and Kevin Fitzgerald

Falling oil prices are most likely to affect the economic viability of renewable energy technologies that compete directly in the modern sector as large-scale petroleum substitutes. Projects that involve small-scale and rural applications are less likely to suffer.

The economic sensitivity of renewable energy technologies to changing oil prices is a function of a project's size and location. Renewable energy technologies are those that make use of solar, wind, and biomass resources.

Renewable energy technologies that compete directly in the modern sector as large-scale petroleum substitutes suffer the most from falling oil prices. These include "dendothermal" power plants, fuel alcohol projects, bagasse production schemes, biomass gasifiers for process heat, wind farms, and industrial solar water heating systems.

The economic viability of small-scale or remote (rural) applications is less likely to be a problem because:

• They are generally smaller, so fuel costs represent a smaller proportion of total costs in the conventional alternative.

• Petroleum fuels are less available and cost more in rural than in urban areas.

• Biomass fuels (such as wood for gasifiers) cost less in rural areas.

Small-scale and rural applications include biogas, biomass gasifiers for engine use, photovoltaic and wind water pumps, solar crop dryers, and domestic solar water heaters. Some of these technologies, such as wind pumps and domestic solar water heaters, are used extensively in many parts of the world.

This paper, a product of the Energy Strategy, Management, and Assessments Division, Industry and Energy Department, has also appeared as an Industry and Energy Department Working Paper . Please contact Janine Littleford, room S2-274, extension 33627.

111. Recent World Bank Activities in Energy

Industry and Energy Department

About one-fifth of total Bank lending goes to the energy sector — and two-thirds of that supports electric power. Annual Bank energy lending has tripled in the last decade. This paper provides background information on that energy lending

Annual Bank energy lending (including credits from the International Development Association) has tripled, from US$1 billion in fiscal 1977 to about US$3.7 billion in fiscal 1987, but it decreased somewhat in fiscal 1988. Its energy lending over the past 40 years has totalled over US$34 billion.

About one-fifth of total Bank lending is directed to the energy sector. More than two-thirds of the Bank's energy lending is for electric power, which amounts to about US$2.0 billion a year — and over US$19 billion in the past nine years.

In other energy subsectors, the Bank is emphasizing assistance for energy supplies for the domestic market that could not be financed by export earnings and serving as a catalyst for the development of these resources.

This paper presents basic background information on Bank lending in energy, as ready reference for answering queries from companies, governments, and other entities outside the Bank. The paper describes the Bank's role in energy lending — detailing in the annexes, the Bank's lending for gas, oil, electric power projects and its recent energy sector loans. It describes projects by country, giving loan amounts and fiscal years of Board approval.

This paper, a product of the Energy Development Division, Industry and Energy Department, has also appeared as an Industry and Energy Department Working Paper. Please contact Mary Fernandez, room S4-037, extension 33637.

112. A Visual Overview of World Oil Markets

Kay McKeough, Jose Escay, and Sompheap Sem

Oil consumption is expected to increase far more in the developing countries than in the industrial nations by the year 2000 — as the industrial nations shift to a service economy and the developing nations industrialize.

Total world demand for oil is expected to increase about 27 percent in the period 1985-2000, from 57 million barrels a day (mmb/d) to 73 mmb/d.

Demand in the centrally-planned economies (in which industry has been protected from the effects of the oil shocks) should remain about the same.

Oil consumption in the industrial countries is expected to grow only 19 percent in the same period.

But the demand in the developing countries should grow about 50 percent from about 16 mmbd in 1985 to 24 mmbd in the year 2000. No other group of countries will experience so great an increase in demand for oil.

As a result of "industrialization" shifts from the industrial countries to the developing nations, oil consumption in the industrial sectors of less developed countries has remained predominant over their transportation sectors. This has important ramifications for fuel substitution, efficiency improvements, and other policies.

This paper, a product of the Energy Development Division, Industry and Energy Department, has also appeared as an Industry and Energy Department Working Paper. Please contact Mary Fernandez, room S4-037, extension 33637.

113. Public Sector Pay and Employment Reform

Barbara Nunberg

Overstaffed bureaucracies afflicted by eroding salaries, demoralization, corruption, moonlighting, and chronic absenteeism are often unable to carry out the key tasks of economic recovery. What should the Bank do about it?

Four types of problems affect public sector pay and employment:

• Too much spent on wages in the public sector (and too little on supplies and maintenance).

• Overstaffed bureaucracies.

• The erosions of public service salaries — with individual wages too low despite the high overall budget for salaries.

• Too small a gap between high and low wages — which constrains the government's ability to hire and keep qualified personnel at the middle and upper levels.

The Bank has used structural adjustment loans, technical assistance projects, and country economic and sector work to address these problems. In its efforts to support reform of public sector pay and employment, the Bank should:

• Systematically analyze the politics of the reform process, and more fully research key pay and employment issues (such as nonwage allowance systems and supplementary benefit schemes).

• Allow flexibility (and some country autonomy) in designing reform, so a country will "own" its own reform.

• Look beyond short-term reform to such medium-term issues as redeployment, retraining, and pension and severance obligations.

• Recruit personnel specialized in pay and employment operations or offer specialized training to Bank staff.

This paper is a product of the Public Sector Management and Private Sector Development Division, Country Economics Department. Please contact Jayne Cheeseman, room N9-057, extension 61703.

114. Africa Region Population Projections: 1988-89 Edition

My T. Vu, Eduard Bos, and Rodolfo A. Bulatao

Its population — at the projected fertility and mortality rates — will double in 20 years.

World population grew by around 88 million in 1987. The number added each year will continue to rise for another decade.

Africa now makes up only 9 percent of the world's population, but it will eventually contribute more to world population growth than any other region. Africa's contribution to world population growth is expected to rise from 17 percent today to 30 percent by 2025 and 45 percent around 2050. Africa's population growth rates are very high and, with projected trends, will double the population in 20 years.

Africa includes the three countries with the highest fertility rates in the world — Rwanda, Kenya, and Malawi. It also includes five of the six countries with the lowest life expectancies. Both fertility and mortality are projected to decline in all countries, but will decline more slowly than in other regions.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

115. Asia Region Population Projections: 1988-89 Edition

My T. Vu, Eduard Bos, and Rodolfo A. Bulatao

The Asia region now has more than half the world's population and contributes half the world's annual population growth.

World population grew by about 88 million in 1987. Asia contributed half this growth, and by the year 2000 its contribution is projected to be only 4 percentage points smaller.

The contrast between India and China illustrates the variation in the region between high fertility and high mortality countries, especially in South Asia, and low fertility countries in East Asia. Although China has the largest population, India now contributes more to world population growth than any other country. At projected rates, India's population will overtake China's by the end of the next century.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

116. Latin America and the Caribbean Region Population Projections: 1988-89 Edition

My T. Vu, Eduard Bos, and Rodolfo A. Bulatao

The Latin America and Caribbean region contributes about 10 percent of the world's growth and is projected to continue to do so into the next century. Its population is expected to double by 2040.

The Latin America and Caribbean region has the lowest mortality rate among the regions and, partly as a result, has a higher population growth rate than Asia.

The LAC region is more demographically homogeneous than the other regions. Life expectancy is higher than elsewhere, and fertility moderate, though there are exceptions. Bolivia and Guatemala have the highest fertility rates in the region, and Bolivia and Haiti have the lowest life expectancy.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091.

117. Europe, Middle East, and North Africa Region Population Projections 1988-89 Edition

My T. Vu, Eduard Bos, and Rodolfo A. Bulatao

The region contributed about 15 percent of the world's population growth last year, and its population is expected to double by 2025.

World population grew by about 88 million in 1987. The Europe, Middle East, and North Africa region contributes about 15 percent of the growth, and this contribution is projected to rise gradually until the end of the next century. The population of the region is expected to double by 2025.

Demographically, the EMN region has two distinct subregions. The European area has fertility and growth rates among the lowest in the world, but crude mortality is slightly higher than in other subregions because of an older age structure. The Afro-Asian area has growth rates closer to those of the Sub-Saharan Africa region. The fast pace of population growth is attributed to relatively high birth and low death rates.

The region includes the country with the world's highest population growth rate, Qatar, and the country with the lowest life expectancy, Afghanistan.

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Sonia Ainsworth, room S6-065, extension 31091.

118. Contract Plans and Public Enterprise Performance

John Nellis

Contract plans help clarify goals, increase managerial autonomy, and open a dialogue between management and government — but their benefits have been oversold.

Roughly 100 public enterprises in developing countries (50 of them with Bank support) are using contract plans — negotiated performance agreements between the government/owner and the enterprises' managers or directors.

Contract plans have not improved the financial performance of public enterprises dramatically. The process is probably more important than the product.

They do produce clearer goals, open a dialogue between management and the state, and offer such benefits as better accounting, auditing, and management information systems, including physical and financial performance indicators and performance targets.

The problem is, they have been oversold. They are not the mechanism of choice for healing a sick company. They work best with firms that operate commercially and already have decent management and sound financial and reporting procedures.

In supporting contract plans, the Bank should keep ambitions modest and emphasize the clarification of goals, increased managerial autonomy, and open negotiating between management and government. Contract plans should not be a condition of Bank adjustment operations — at least not until the process has been tested and shown positive results in the country.

This paper is a product of the Public Sector Management and Private Sector Development Division, Country Economics Department. Please contact Rose Malcolm, room N9-055, extension 61707.

119. Recent Developments in Commodity Modeling: A World Bank Focus

Walter C. Labys

A review of the state of the art of Bank commodity modeling for forecasting and analysis of supplies, demand, and prices.

The Bank has been on the cutting edge in the development and application of models of primary commodity markets and industries — those involving raw materials, agricultural products, and unprocessed or incompletely processed fuel and nonfuel minerals.

The Bank's International Commodity Markets Division uses these models to forecast commodity supply, demand, and prices for use in project evaluation, market and policy analysis, global economic projections, and assessments of the development prospects in developing countries.

In the 1980s, commodity market modeling became less experimental, more realistic, and more directly oriented to the kinds of commodity price forecasts needed for overall Bank efforts — for example:

• Short-, medium-, and long-term forecasts for market adjustments for cocoa and coffee.

• What-if supply forecasts for coffee under different price scenarios for coffee and fertilizer.

• Analyzing and forecasting long-term changes in multiple-commodity markets (say, for fats and oils and high protein meals or for different forms of minerals).

• Analyzing the effects of changing inventories and oil prices and the availability of synthetics on the supply and price of rubber.

• Analyzing the effect of adjusting capital shocks on perennial tree crops.

• Examining the effect of changes in inventory or inflation on commodity price movements.

Researchers have made the models more realistic by factoring in such considerations as risk (particularly for agricultural supplies); the influence of synthetic substitutes on demand for primary commodities; and the influence of noncompetitive market structures on oil prices and trade patterns.

Price and quantity forecasting has been the major focus of Bank modeling efforts, but the Bank also examines such other issues as investment policies, optimal market stabilization, and pricing strategies.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Aban Daruwala, room S7-040, extension 33716.

120. Public Policy and Private Investment in Turkey

Ajay Chhibber and Sweder van Wijnbergen

Turkey's public policy for expenditure and growth encouraged private investment despite the high real interest rates necessary to induce private domestic savings in a period of declining foreign savings.

Developing countries trying to emerge from recessionary spirals must recognize the importance of public-private interactions in designing growth-oriented adjustment programs. They must appreciate the complex impact of fiscal policy on the economy — the way government credit, investment, and (indirectly) exchange rate policies affect export performance and hence growth and capacity utilization, thus encouraging private investment.

Turkey is an interesting country for studying how public policy can stimulate private investment. The reason is that unlike other high-debt countries, Turkey has managed to increase the rate of investment in recent years despite external constraints and high real interest rates.

Turkey's strategy nevertheless has limits. The surges in public investment in 1986 and 1987 have since hurt macro stability. And private investment has tilted toward such nontradables as housing — partly as a result of special credit schemes directed at mass housing and partly because housing investment is an attractive hedge against inflation. Unless corrected, this shift could hurt future export prospects.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

121. Commercial Bank Provisioning Against Claims on Developing Countries

Graham Bird

Commercial banks, through their provisioning, recognize that they expect less than full payment on their developing country debt. Provisioning reduces the willingness of banks to provide new funds, increasing the importance of debt-reduction schemes. Banks would like the multilateral agencies to take the lead. One answer, now or in the future, may be an international bankruptcy court.

With Mexico's announcement in 1982 that it could not meet its debt obligation, the debt crisis — which arose from the spate of lending that began with the 1973 oil hike — became public. In 1985, Peru limited payment on its debt obligations. The 1985 Baker Plan — designed to lend more to heavily indebted countries in return for structural adjustment within them — had little impact on financial flows. In 1987, Brazil suspended interest rate payments on part of its debt.

Against this background, Citicorp decided in May 1987 to add $3 billion to its loan loss reserves — and many other money center banks, in the United States and abroad, followed suit. Such provisioning — putting aside reserves in low-earning but risk-free assets to cover the possibility of default on loans — reduces both risk exposure and short-term earnings.

No matter what the banks say otherwise, one implication of provisioning is that the banks expect less than full repayment of these debts. Banks with large provisions will lean more toward debt relief than toward the injection of new money to debtor nations. The alternative to debt relief may be general default — given the deteriorating economies in debtor countries, the gloomy global outlook, and the diminished expectation of new monies.

Provisioning may be seen as the commercial banks' first step toward extricating themselves from a certain kind of investment in developing countries. A general feeling in the banking community is that the multilateral agencies must take a stronger role than they have in resolving the debt problem — not that they lend vast sums of money but that they assume stewardship of the debt crisis, adopting a clearly thought out strategy, and making more constructive use of conditionality.

One proposed instrument for this is an international bankruptcy court (the International Debt Restructuring Agency). It would bring together creditors, the debtor country, and the multilateral agencies to work out an appropriate debt relief agreement, conditional on adjustment measures undertaken by the debtor country.

This paper is a product of the Debt and International Finance Division, International Economics Department. Please contact Ida Holloman-Williams, room S7-035, extension 33729.

122. Import Demand in Developing Countries

Riccardo Faini, Lant Pritchett, and Fernando Clavijo

As a less restrictive trade regime is associated with greater responsiveness to economic incentives, econometric evidence that does not allow for the impact of import controls cannot be used reliably to assess the effect of a devaluation on the trade balance.

"Measured income elasticities in developing countries are generally higher than 1 -- and relative prices, although mostly inelastic, significantly affect demand for imports. When a lack of foreign exchange or, more generally, a restrictive trade regime effectively constrains import flows, the measured impact of price and activity variables becomes less pronounced. To recover structural elasticities in such a case, one can develop a direct modeling of quantitative restrictions (which is arduous) or use the experience of a structurally similar country (which is quicker). In general, a less restrictive trade regime is associated with greater responsiveness to economic incentives.

Econometric evidence that does not allow for the impact of import controls cannot be used reliably to assess the effect of a devaluation on the trade balance. Indeed, devaluation combined with trade liberalization (a common feature of many adjustment programs) will have a more pronounced effect on import demand than available evidence would suggest.

The authors compare three approaches to modeling and estimating import demand--which is arduous when trade controls are pervasive:

Option 1: Trade import equations work well when import controls are relatively stable over time, but it is difficult to determine if this is the case. Without *a priori* information, and short of using all misspecification tests, one could perhaps rely on a comparison between estimated elasticity and the "norm" computed in this study. If the difference between the two values is deemed too high, consider:

Option 2: This takes into account the impact of foreign exchange availability. If it seems clear that the country has foreign exchange constraints, the traditional specifications should be bypassed, but incorporating this constraint into the import demand equation is difficult for several reasons. At a minimum, the authors recommend using the broadest possible instrument list, including indicators of world demand, competitors' prices in export markets, exogenous capital flows, and international reserves.

Option 3: The direct incorporation of quantitative restrictions is the main method of recovering structural (notional) demand parameters and assessing, for example, the impact of removing import restrictions. Unfortunately, a good indicator of quantitative restrictions is not usually available and, even if it exists, interpreting its behavior may be difficult.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-065, extension 61539.

123. Export Supply, Capacity, and Relative Prices

Riccardo Faini

A model applied to data on Turkey and Morocco suggests that prices and capacity have more influence on export supply than domestic demand does. Can a case be made for placing less emphasis on contractionary macroeconomic policies to achieve sustainable external balance? In the neoclassical approach to specifying an export supply equation, relative prices and capacity are assumed to play a crucial role in domestic firms' decisions to supply exports.

In the Keynesian approach, the willingness of domestic firms to supply foreign markets is considered to be largely a function of domestic demand pressure. Keynesian analyses do not allow for the impact of relative prices.

Faini blends the two approaches in the model he has applied to Turkey and Morocco — countries chosen because of the shifts they have both undergone in their trade incentive structure, and despite the dearth of data on export supply behavior in developing countries.

In Faini's model, a firm is assumed to choose, first, the level of productive capacity and, then, one period later, to determine production and allocation between foreign and domestic markets on the basis of realized prices, demand conditions, and installed capacity.

Faini's conclusion: Both prices and capacity are significant determinants of export supply. If further studies confirm that relative prices have a significant influence (and domestic demand pressure a weak influence) on export supply — an argument can probably be made for placing less emphasis on contractionary macroeconomic policies as a means of achieving a sustainable external balance. Evidence to support such a conclusion is insufficient, but further research is warranted.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-065, extension 61539.

124. International Macroeconomic Adjustment, 1987-1992: A World Model Approach

Robert E. King and Helena Tang

Three global econometric models produced the same conclusions: that the global economy is most likely to improve through fiscal expansion in Japan combined with fiscal contraction and monetary easing in the United States. The same *models forecast a slowdown in 1988 and low growth in 1989/90 followed by US recovery in 1991-1992.*

In forecasting key economic indicators for the major industrial countries, the Bank's Economic Analysis and Prospects Division (IECAP) does not rely on a completely linked global macroeconomic model.

Would IECAP forecasts be consistent with forecasts produced by linked models?

To find out, researchers introduced Bank assumptions about exchange rates and commodity prices into three global models — under the auspices of the OECD, Project Link, and Wharton Econometrics (The WEFA Group).

Differences existed between the IECAP forecasts and the model results — and between the model forecasts (using Bank assumptions).

But given Bank assumptions, the three models agreed on the medium-term forecast: a small slowdown in 1988, low growth in 1989 and/or 1990, and recovery in the United States in 1991 and 1992.

Simulations on all three models also produced the same conclusion about policy: that the global economy is most likely to improve in 1989/90 and stabilize in the 1990s through a combination of fiscal contraction and monetary easing in the United States combined with fiscal expansion in Japan.

This paper is a product of the Economic Analysis and Prospects Division, International Economics Department. Please contact Karen Adams, room S12-057, extension 33738.

125. The Effects of Financial Liberalization in Thailand, Indonesia, and the Philippines: A Quantitative Evaluation

Christophe Chamley and Qaizar Hussain

Removal of financial regulations was successful and had a powerful impact on the level of financial assests in Thailand and Indonesia but failed in the Philippines because taxes imposed on financial institutions interacted with high inflation rates.

In the early 1980s, interest rate ceilings and other regulations affecting financial assets were lifted in Thailand, Indonesia, and the Philippines.

Did financial liberalization work equally well in all three countries? The topic is important because the heavy burden many countries put on financial institutions falls mainly on the holders of financial assets.

The answer is that liberalization of interest rates significantly increased the real return on financial assets in Thailand and Indonesia, because all interest and credit constraints were removed. Similar reform failed in the Philippines, where taxes on the financial sector interacted with high rates of inflation.

As the quantitative evaluation in this paper shows, the efficiency gains in Thailand and Indonesia were small compared with GDP but large compared with the levels of transfers (explicit or implicit) induced by policies of regulation.

The chief lesson to be drawn from these experiences — particularly in the Philippines — is that reallocating resources by manipulating the financial system may be less efficient than other fiscal policies.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

126. Educating Managers for Business and Government

Samuel Paul, John C. Ickis, and Jacob Levitsky

What kind of training is most appropriate for corporate executives who must understand world trends and their counterparts in other countries? for owners of small enterprises? for public administrators? And how effective is the training in the United States and elsewhere?

How does the Harvard MBA stack up against executives trained in other ways? How do US business schools compare with training institutions in Japan and India? Which training approaches are most useful for: *Entrepreneurs and owner-managers of small enterprises?*

Traditionally, management education has been geared toward training executives for large-scale enterprises. But in the 1980s, small and medium-size enterprises have also become important (for different reasons) in both developed and developing countries. And any new training programs for entrepreneurs and owner-managers of small enterprises have shifted from an emphasis on conventional management skills to one on entrepreneurship and enterprise development.

Corporate managers

In-company programs may meet many management training needs, but managers who must understand world trends and interact with counterparts in other cultures may also need degree programs that build general analytical and communications skills.

Students in both business schools and executive programs need more understanding of the international environment, more knowledge about export marketing, and more ability to analyze and improve operations and productivity, motivate employees, and make practical use of information systems in competition.

Public administrators

The role of public administrators is shifting away from regulation toward partnership with business and support of a more autonomous private sector. The higher civil servant's role has shifted from caretaker or administrator to policy advisor and decisionmaker.

The new roles of the public administrator are reflected in senior executive programs designed to develop general managers who can move easily from one agency to another. Even university training places less emphasis on law and administration and more on disciplines relevant to policy analysis.

Many problems associated with pre-entry university degree programs and in-service government training programs are overcome by autonomous management institutes, organized privately or with government sponsorship.

This paper is a product of the Public Sector Management and Private Sector Development Division, Country Economics Department. Please contact Ernestina Madrona, room N9-061, extension 61711.

127. Linking Development, Trade, and Debt Strategies in Highly Indebted Countries

Ishac Diwan

As world interest rates and the level of external debt rise and terms of trade decline, a policy of import substitution begins to make sense for a highly indebted country. At that point, it is in the credi-

tor's interests to grant some debt relief in exchange for a higher export effort.

Despite their productive inefficiencies, export promotion and import substitution policies can improve welfare in a highly indebted country.

After all, the ultimate penalty facing defaulting countries is exclusion from international trade markets. Export promotion can increase available foreign financing, and import substitution can reduce the debt service.

Choosing between export promotion and import substitution is a matter of determining whether it is more profitable to increase the credit ceiling to borrow more — or to reduce the credit ceiling below inherited debt so there is less to repay.

Important determinants in this choice are the stock of inherited foreign debt, the level of world interest rates, the terms of trade, and the availability of profitable investment opportunities.

Generally, a policy of export promotion is best if the level of debt and interest rates are low and the terms of trade are high.

As these variables deteriorate — as a Korea becomes a Peru — the optimal strategy becomes import substitution. In those circumstances, it is in the creditor's interests to grant some debt relief in exchange for a higher export effort.

This paper is a product of the Debt and International Finance Division, International Economics Department. Please contact Ishac Diwan, room S7-033, extension 33910.

128. Public Finance in Adjustment Programs

Ajay Chhibber and Javad Khalilzadeh-Shirazi

Countries undergoing adjustment have increasingly found it difficult to sustain cuts in public sector deficits to match cuts in external financing, thus exacerbating inflation and financial disequilibrium. Moreover, fiscal contraction has often been short-term oriented. Fundamental fiscal reform involving a medium-term perspective has been rare. Given the central importance of fiscal issues in adjustment programs, however, greater focus on them is essential if such programs are to succeed.

This paper, prepared in part as a background study for the Bank's Report on Adjustment Lending, reviews the experience with public finance issues under adjustment programs. This experience shows that fiscal changes are often triggered by budget and balance of payment crises. As a result, short-term considerations have dominated the policy measures introduced. Traditional stabilization policies usually emphasize measures aimed at reducing aggregate demand. On the fiscal side, this has implied cut-backs in public expenditures. There is, however, growing recognition of the need for more growth-oriented adjustment programs, which entail a more comprehensive and durable approach to fiscal reform and therefore require a medium-term perspective.

Countries committed to fundamental reform of fiscal and other key policy areas should be able to avail themselves of external financial support that lasts long enough for them to initiate and sustain the change process. They must strike a balance between stabilization and adjustment. On the expenditure side, this includes a much better understanding of and attention to compositional changes followed by reorientation of e expenditure program. On the revenue side, it entails comprehensive tax reform designed to reduce distortions, to increase buoyancy, and to ensure equity.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

129. Women in Development: Defining the Issues

Paul Collier

Changing many apparently gender-neutral public policies will make women a more productive part of the economy — and allow them a more equitable share of its benefits — in some not-so-obvious ways.

Women can be viewed as an underused resource (affecting efficiency) or as a disadvantaged target group (getting an inequitable share of health, education, material advantages, status, and leisure time). Within the household, they are burdened not only with the physical demands associated with reproduction but also with obligations that are not commensurate with their rights. At the societal level, they are discriminated against in their access to public services and jobs, and they lack role models for economic advancement.

Much public policy affects men and women differently, in ways that are not immediately apparent.

A study in rural Tanzania, for example, revealed that job discrimination against women lessened as education increased. A 36-year-old man with secondary education had a three in four chance of nonfarm wage employment; a woman of the same age and education had half the chance. A woman who had completed primary education had only a quarter the chance of a man of the same age and education. With partial primary education or less she had only one-fifth the chance. The policy implication: general expansion of the education system may reduce the aggregate incidence of discrimination if it enables women to continue their schooling.

However, other factors are at work, too. For example, women are less likely to get the many public sector jobs available in rural areas because they are poorly placed to lobby for patronage.

Self-employed women are also at a disadvantage. The credit market is intrinsically male-biased. Lacking the autonomy to build up creditratings, women must rely on savings — and, as managers of the household, they have a greater need than men for liquid assets. Public support of savings institutions to reach small-scale farmers or entrepreneurs tends to improve women's lot.

Some public services tend to be gender-biased. To the extent that certain jobs tend to be done by women, public policy can easily be targeted to benefit women. Rural water, fuel, and health services tend to benefit women more than men. Pricing firewood substitutes, for example, affects women disproportionately because women spend a lot of time gathering firewood. Piped water in effect increases women's time for other productive activities (or even for leisure) because they traditionally spend much time fetching water. Education and extension services (as currently administered) tend to benefit men more than women.

Food subsidies directly benefit net purchasers of food (namely, urban households, for which the population is disproportionately male). Indirectly, some of the subsidy may accrue to sellers, who, at least in Africa, are disproportionately women. Income taxes tend to fall more heavily on males, and expenditure taxes on females. Generalized sales taxes tend to be biased against women but male and female spending patterns are different, so sales taxes can be gender-targeted.

By increasing entry-level wages relative to wages at senior levels, minimum wage laws tend to favor women. To the extent that minimum wages are falling, the wage structure is becoming less favorable to women.

This paper is a product of the Women in Development Division, Population and Human Resources Department. Please contact Johanna Klous, room S9-121, extension 33745

130. Maternal Education and the Vicious Cycle of High Fertility and Malnutrition: An Analytic Survey

Matthew Lockwood and Paul Collier

To break the vicious cycle of poor nutrition and high fertility — reinforced by women's low status — maternal and child health policy, including family planning, should be integrated into public policy and linked to education.

Evidence is increasing that one-dimensional policies, such as family planning and supplemental feeding programs, have little chance on their own of achieving the desired objectives — that what is called for is a maternal and child health policy, including family planning, integrated into public policy and linked to education.

While family planning is probably more cost-effective in reducing fertility than programs for child mortality or increasing education, family planning programs are often more effective when child mortality rates are lower and levels of education are higher. In the long term, the most cost-effective approach to reducing fertility is probably to integrate family planning with efforts to improve maternal-child health and education. On the other hand, if the aim is increasing income per capita, educational policies dominate family planning measures, despite large cost differentials.

Similarly, where the aim of public health provision is to reduce mortality and improve nutrition, there is a strong consensus that integration and coordination of maternal-child health services, especially with educational and literacy policy, is essential and cost-effective. Improving women's ability to work and earn outside the home improves their economic position and power (and probably expenditures on children) — although if their nutritional status is already marginal, working harder to produce more may be a mixed blessing. We must ask: how much extra income do they bring to the household, and to what extent do they maintain control over the income they earn? Also, if mothers and children enjoy more income and autonomy through mothers' employment outside the home, but suffer from the conditions of the work itself, or from lack of adequate childcare alternatives, public policy could alleviate these difficulties — for example, through raising the productivity of women's labor (better access to credit, extension, and markets) and through relaxing the constraints on women's welfare (giving them more schooling, which will give them access to better jobs, more money, and more control over it, as well as enable them to take better care of their children).

This paper is a product of the Women in Development Division, Population and Human Resources Department. Please contact Johanna Klous, room S9-123, extension 33745.

131. Implementing Direct Consumption Taxes in Developing Countries

George R. Zodrow and Charles E. McLure Jr.

This paper argues that replacing an income tax with a direct tax on individual consumption may be a feasible policy option for a developing country. Such a tax should include (1) a flat-rate "consumption-based" business tax that allows immediate expensing of all business-related nonfinancial purchases, and (2) an individual tax with progressive marginal rates on a base of all wages and pension receipts plus gifts and inheritances received. It could be supplemented by anidual wealth tax.

This report examines the possibility of using a direct tax on consumption as a replacement for an existing income tax within the context of a developing country. The structural differences between income and consumption taxes are described, and some simple examples are used to illustrate the basic differences in the taxation of businesses and individuals under the two approaches. A variety of critical structural features of a direct consumption tax are addressed, including (1) the rationale for including a business tax in a consumption-based tax system, (2) the treatment of debt at the business level, (3) the differences between "cash flow" and "tax prepayment" treatment at the individual level, and (4) alternative means of taxing gifts and bequests at the individual level.

The report includes a brief survey of the extensive literature on the choice between income and consumption as the basis for a system of direct taxation. This survey compares the relative merits of the two approaches in terms of the standard criteria of simplicity, equity, economic neutrality andefficiency, and consistency with economic growth. The discussion focuses on issues that are particularly relevant in a developing country context, and argues (primarily on simplicity grounds) that a consumption tax may well be preferable to an income tax as the form of direct taxation in a developing country.

After a detailed discussion of the choice between cash flow and tax prepayment treatment at the individual level under a direct consumption tax, the analysis concludes that for simplicity reasons the individual tax prepayment approach is the more appropriate one in the developing country context. The report then describes the structure and implementation of such a direct consumption tax. The discussion includes an examination of international and transitional issues, and also comments on the desirability and feasibility of supplementary wealth taxes and taxation on a presumptive basis.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

132. Is the Discount on the Secondary Market a Case for LDC Debt Relief?

Daniel Cohen

A discount in the secondary market is a case for debt service relief but not necessarily for a write-off. The author derives a "maximum repayment" rescheduling program, which trades off higher current investment for lower current debt service.

Proposition 1: The "maximum repayment" program the lenders would like to monitor involve a fixed investment rate that is smaller than the socially optimal rate and larger than the post-default rate. It involves a transfer of resources from the debtor that is a fixed fraction of GDP — a fraction that is smaller than the cost of default.

Proposition 2: When the debt-to-GDP ratio is above a floor value (h*), the lenders can capture the "maximum repayment" value (V*) by fictitiously splitting the debt into performing and nonperforming components. Each period, they should ask the borrower to service the performing component of the debt only, and let the performing component grow at a rate equal to the economy's expected growth rate. Meanwhile, the nonperforming asset is automatically capitalized at the riskless rate. When the actual growth rate of the economy is above (below) its expected level, the performing part of the debt is scaled up (down). When this "maximum repayment" rescheduling strategy is undertaken, the equilibrium market value of the debt is equal to V*.

Proposition 3: When the debt-to-GDP ratio is above the threshold h*, the debt can be written down to h* GDP without impairing the lender's return. If the write-off is repeated each time the economy declines, and if the rescheduling is undertaken according to Proposition 2, the lenders capture the "maximum repayment" while the market price of the debt is stabilized at a constant equilibrium price below par.

(*Implication:* Observing a discount on the debt does not automatically warrant a write-off. The discount implies the possibility of default, but lenders should not write the debt off until the possibility materializes. But the **service** of the debt should **always** be scaled down by its market value rather than kept in line with its face value.)

Proposition 4: When the lenders reschedule the debt on a period-by-period basis, they induce the country to follow a growth pattern that exactly mimics the post-default path. The lenders capture each period the penalty they could impose on the defaulting country. As a result, they get more on a period-by-period basis, but less on average than under the "maximum repayment" schedule.Under such a ("time consistent") rescheduling strategy, a write-off and multiyear rescheduling may prove beneficial, but the gains fall short of the strategy defined in Proposition 2.

How relevant is the idea of "debt overhang" (according to which the market value of the debt may depend negatively upon its fact value)? Empirical evidence presented here indicates that, at a 75 percent confidence level, 9 of 33 countries studied may suffer from a debt overhang problem. At a 90 percent confidence level, only 4 of them may be affected by it.

This paper is a product of the Debt and International Finance Division, International Economics Department. Please contact Maggie Luna, room S7-035, extension 33729.

133. Lewis Through a Looking Glass: Public Sector Employment, Rent-Seeking, and Economic Growth

Alan Gelb, John B. Knight, and Richard H. Sabot

What Adam Smith wrote in 1776 is still broadly true: "Great nations are never impoverished by private, though they sometimes are by public, prodigality and misconduct."

Governments in developing countries should and do provide valuable goods and services, but resources are wasted when public revenues support unproductive employees (at the expense of productive workers).

The dynamic cost of such surplus labor in the public sector is potentially much more important than the static social cost normally attributed to urban unemployment. Fiscal resources are needed to support that unproductive "sink," thereby diverting resources from productive investment.

The accumulation, in little more than a decade, of even a small part of the total labor force in an unproductive sink can sap the economy of its dynamism, eliminating improvements in living standards for all but the few who obtain rent-yielding jobs.

Moreover, creating sheltered employment tends to be self-perpetuating. It creates and consolidates vested interests that seek to perpetuate the protected jobs. In the inverse of the Lewis model, the extent of surplus labor increases, rather than diminishes, over time.

This paper is a product of the Financial Policy and Systems Division, Country Economics Department. Please contact Annette Hodges, room N9-021, extension 61268.

134. International Trade in Financial Services

Silvia B. Sagari

Country A is richly endowed with highly trained bankers and managers, Country B with capital, and Country C with arable land. Which country is at a comparative advantage in providing financial services to consumers in other countries?

The issue of trade in services is the subject of increasing interest. Evidence of this is its inclusion in the Uruguay Round of GATT negotiations. As a contribution to the analysis of the issue, in this paper the influence of a country's resource endowments on its net trade in financial services is analyzed.

A modified version of the Heckscher-Ohlin model is developed, which allows for technological differences across countries. This version is then used to explore which productive resources constitute sources of comparative advantage in the provision of financial services. What is the impact of the availability of skilled labor, physical capital, or other productive resources on trade in financial services?

The conclusion? Skilled labor is a source of comparative advantage in financial services. Conversely, relatively larger endowments of arable land and capital would have a negative impact on trade in those services and can therefore be identified as sources of comparative disadvantage. Land resources tend to be diverted to agricultural use; capital tends to be diverted to manufacturing. Evidence on the effects of unskilled labor endowments is inconclusive.

Future research should focus on the implications of restricting trade in financial services. If financial services are considered as "inputs" in the production of goods and services, might barriers to trade in financial services result in inefficient allocation of productive resources, distorted consumption patterns, and significant welfare losses?

This paper is a product of the Financial Policy and Sytems Division, Country Economics Department. Please contact Wilai Pitayatonakarn, room N9-005, extension 60353.

135. PPR Working Papers Catalog of Numbers 1 to 200

136. Pricing Commodity Bonds Using Binomial Option Pricing

Raghuram Rajan

Binomial option pricing offers an easy, flexible, comprehensive method for pricing commodity-linked bonds when there is risk both of default and of changes in commodity prices.

Commodity-linked bonds have received considerable attention recently as a way to tailor a developing country's debt repayments to its ability to pay. A commodity bond makes repayments subject to fluctuations in the price of the underlying commodity.

Previously, formulas for pricing these bonds were based on the standard continuous-time option-pricing method. Solution of the derived differential equation was difficult even when assumptions were simplified.

Binomial option pricing offers a simpler, more intuitive, and more flexible formula for pricing commodity-linked bonds when there is risk both of default and of changes in commodity prices.

Binomial probability distribution trees are used to develop the pricing formula. Extensions to the model — including the pricing of secondary market debt — are easily incorporated. The technique can also be used to derive, among other things, the implied performance risk of secondary market debt.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Julie Raulin, room S7-069, extension 33715.

137. Trends in Nontariff Barriers of Developed Countries: 1966-1986

Sam Laird and Alexander Yeats

The near doubling of nontariff barriers in the developed countries has limited the developing countries' ability to increase exports — particularly in agriculture and such labor-intensive products as textiles, clothing, and footwear — and deal effectively with their debt burdens.

In the major developed countries, 25 percent of imports were affected by nontariff barriers in 1966. Twenty years later that number had nearly doubled, to 48 percent.

Some nontariff barriers affecting fuels were liberalized, but new trade restrictions were introduced on imports of agricultural products, textiles, clothing, ferrous metals, and nonelectric machinery. Nontariff barriers grew faster in the European Community than in the United States or Japan.

Existing GATT arrangements have lowered tariffs but have not stemmed the growth of nontariff protection. Procedures for liberalizing nontariff barriers must be established in multilateral trade negotiations like the Uruguay Round.

These barriers limit the developing countries' ability to expand their export opportunities — particularly in agriculture and such labor-intensive products as textiles, clothing, and footwear. As a result, they are unable to achieve economic growth and deal effectively with their debt burden.

This paper is a product of the International Trade Division, International Economics Department. Please contact Jean Epps, room S8-037, extension 33710.

138. Fiscal Adjustment and Deficit Financing during the Debt Crisis

William R. Easterly

Highly indebted countries are probably better off raising conventional taxes and cutting current spending — rather than raising taxes on financial intermediation and cutting public investment. But shifting policies may require the breathing space only new external financing or debt relief would provide.

To study the adjustment to the debt crisis, the author compared the experience of seven "crisis" debtor countries (Argentina, Brazil, Chile, Mexico, Morocco, Yugoslavia, and the Philippines) with those of five "noncrisis" debtor countries (Colombia, Indonesia, Korea, Turkey, and Thailand).

In response to a sharp reduction in external capital flows, the crisis countries rescheduled their debt during 1982-87. The noncrisis group avoided debt rescheduling during that period and maintained access to external capital.

Most of the noncrisis countries followed an approach of modest domestic financing at market interest rates. This was less costly for private investment because financial savings grew rapidly.

In the crisis countries, public investment was the locus of fiscal adjustment. Most of the crisis countries took the approach of increased domestic financing through taxes on financial intermediation — through reserve requirements, high inflation, and interest rate controls. In the short run, this tax precipitated capital flight and financial disintermediation.

The crisis countries would probably have been better off raising conventional taxes and cutting current spending rather than raising taxes on financial intermediation and cutting public investment.

Small increases in rates or coverage of broad-based taxes (such as income or consumption) are probably less distortionary for the same amount of additional revenue than taxes on financial intermediation. Conventional broad-based taxes penalize mainly consumption. The tax on financial intermediation falls more on investment and may cause more severe damage in the long run.

In a situation that called for quick action, the behavior of the crisis countries was understandable. It takes more time to raise conventional taxes than to tax financial balances, and it takes more time (because it is harder) to cut current spending than to cut public investment.

Shifting to sounder policies in the crisis countries may require the breathing space only new external financing or relief from debt service would provide.

This paper is a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department. Please contact Raquel Luz, room N11-057, extension 61760.

139. A Conceptual Framework for Adjustment Policies

Bela Balassa

The principal objective of stabilization policies under the auspices of the International Monetary Fund is to improve the balance of payments. In turn, increasing the rate of growth of output may be considered the principal objective of adjustment policies under World Bank auspices.

The principal objective of stabilization policies under the auspices of the International Monetary Fund is to improve the balance of payments. In turn, increasing the rate of growth of output may be considered the principal objective of adjustment policies under World Bank auspices.

The growth objective may be pursued by improving the efficiency of using existing resources, adding to available resources, and ensuring the efficient use of these additions to resources. In the first case, production incentives need to be reformed; in the second, incentives are provided to savings and investment; in the third, the choice of alternative investments is the relevant consideration. One may, then, classify policy instruments for adjustment into three categories, according to whether they affect resource allocation, savings and investment, and the choice of investment.

Policy instruments that can be employed to improve the use of existing resources include exchange rate and trade policy as well as government regulations and measures relating to state enterprises. In turn, measures that may be taken to increase savings and investment comprise reforming tax regulations, establishing realistic interest rates, increasing public savings, developing financial intermediation, and providing investment incentives. Finally, measures that affect the allocation of investment among particular uses pertain to private investment, public investment, or to particular sectors.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Norma Campbell, room S9-047, extension 33769.

140. Building Educational Evaluation Capacity in Developing Countries

John Middleton, James Terry, and Deborah Bloch

Education monitoring, testing, and evaluation systems are urgently needed in developing countries. Lessons from the American experience suggest that investment plans should tie evaluation standards, requirements, and funding to program support for policy and institutional changes at the national, intermediate and school levels of education systems.

Relatively few developing countries have established a sustainable capacity for educational monitoring and evaluation. As a result, the efforts of governments and assistance agencies to improve education have been hampered by lack of information on outcomes and costs.

World Bank experience with educational evaluation has been disappointing, emphasizing monitoring of project inputs with little attention to outcomes and costs. Efforts to develop a sustained evaluation capacity have largely failed.

In the United States, educational evaluation has become an integral part of education ma- nagement. Large-scale research studies have given way to student achievement testing and localized evaluations that provide decisionmakers with information useful in improving the quality of schools.

These results were achieved through federal policy and funding support for evaluation. Standards, requirements, and financial incentives for evaluation were tied to federal financing for school improvement programs. Institutional capacity was developed at state, district, and school levels.

Similar investment strategies can be used in developing countries. However, the strategies should be incremental, first putting systems in place at relatively low levels of technical sophistication, then raising the technical level as institutional capacity is developed. Staff training and development, including the social science and education faculties of universities, is essential to developing sustainable capacity.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Cristobal, room S6-001, extension 33640.

141. Payroll Taxes for Financing Training in Developing Countries

John Whalley and Adrian Ziderman

Whether a developing country finances training through payroll taxes may depend on the country's stage of development.

In most developing countries, the major programs of vocational training and skill development are financed from general government revenues. Increasingly, however, earmarked payroll taxes have been introduced to finance training.

The authors summarize international experience with payroll taxes, the two major types of which reflect different objectives. Under the traditional, so-called Latin American model, revenues are earmarked to finance training provided by the state or a national training authority. Under the levy-grant (or rebate) scheme, payroll tax rebates are offered to enterprises to set up or broaden in-service training programs

Whether payroll taxes are a more desirable source of financing than other alternatives probably depends upon the stage of a country's development.

Few lower-income countries finance training through payroll levies. They may have only limited access to such broadly-based taxes as value-added taxes and tend to rely instead on trade taxes and specific excises (say, on drink, tobacco, and gasoline). In countries where the government's financing options are limited, payroll taxes may be attractive but administratively infeasible.

Most countries using the payroll tax approach are situated in the lower-middle income range. In this range, value-added taxes may be equally justifiable economically but two things make the payroll tax approach more attractive: the ability to target payroll taxes using differential tax rates by sector, and the rationale of the reverse social security scheme (that is, with workers receiving benefits when they are young and essentially paying taxes later to cover the training costs of workers who follow them.)

As a country develops, other financing alternatives should become realistic — for instance, government guarantees for worker loans, or tuition-paid programs (with partial recovery of costs through user fees and a student loan program).

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Cristobal, room S6-001, extension 33640.

142. Vocational Secondary Schooling in Israel: A Study of Labor Market Outcomes

Adrian Ziderman

Most economists consider vocational education to be socially inefficient. Israel may prove them wrong — particularly for students whose occupations are related to their course of study.

Israel is a fitting place to compare the outcomes of academic and vocational schooling. More than half the Israeli secondary school pupils attend vocational schools or vocational streams in comprehensive schools.

A study based on 1983 Israeli census data shows vocational schooling to be more cost-effective than general academic education. In particular, vocational school completers who work in occupations related to their course of study earn about 10 percent more a year than their counterparts who either attended secondary schools or who attended vocational schools but were employed in occupations unrelated to their course of study.

Studies that show vocational schooling to be cost-ineffective compared with academic schools tend to concentrate on earnings, without taking into account such variables as the relevance of the type of occupation to the vocational studies pursued. Future evaluation studies should pay more attention not only to that variable but to issues of curriculum (including the type and scope of vocational studies).

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Cristobal, room S6-001, extension 33640.

143. Decentralization in Education: An Economic Perspective

Donald R. Winkler

Some decisionmaking (about educational finance and teacher recruitment) should be handled at the local level and some (about school organization and curriculum) at the regional level. Problems of equity can be addressed through a system of central government grants.

Evaluating decentralization in terms of three economic criteria — social efficiency, technical efficiency, and equity — the author argues that some decisionmaking (about finance and teacher recruitment) should be provided for at the local level, and some (about school organization and curriculum) at the regional level.

A system of central government grants should be used to correct problems of equity and inefficiency inherent in a decentralized system.

Little is known about the economic and educational consequences of decentralization, despite a wide variety of country experiences. The effects of decentralization are difficult to isolate, so scholars have focused instead on issues of implementation.

Decentralization policies are most successfully implemented if:

• There is a tradition of self-reliance in local communities.

• Local governments or communities have their own sources of tax revenues and voluntary contributions.

• The pressure for decentralization originates in the community rather than with ministry planners.

• All important affected political groups, especially teachers, are involved in and informed about the development of decentralization plans.

• Administrative capacity at the local level either exists or is provided through training.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Cristobal, room S6-001, extension 33640.

144. Product Differentiation and Foreign Trade in CGE Models of Small Economies

Jaime de Melo and Sherman Robinson

In a simple, one-sector analytical model, the authors show that applying the same assumption about product differentiation to imports as to exports gives rise to a well-behaved, price-taking economy and normally shaped offer curves.

In recent years, two classes of computable general equilibrium (CGE) trade models have been used to investigate external sector policies: single-country and multicountry trade models.

The single-country models have been used to analyze such external sector issues as the impact of restrictions on foreign trade or the impact of changes in net foreign transfers or world prices on the equilibrium of the real exchange rate. The multicountry models are typically concerned with resource allocation and the welfare implications of tariff reductions.

The authors examine the treatment of exports and imports — and different assumptions about export demand and import supply behavior — in recent single-country CGE models of small economies. They present a simple, one-sector analytical model that captures the major features of the multisector counterpart used in applied models.

They show that applying the same assumption about product differentiation to imports as to exports gives rise to a well-behaved, price-taking economy and normally shaped offer curves.

They illustrate the one-sector model with a numerical example which shows — using different trade substitution elasticities — the implications of the choice of weights used as a proxy for the domestic price index in computations of real exchange rate indices.

The model also shows the role of foreign trade elasticities in the popular Australian model — with traded and nontraded goods. Trade substitution elasticities on the import side play a crucial role in determining the direction of change in the real exchange rate during terms-of-trade perturbations.

This paper, forthcoming in the *Journal of International Economics*, is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-065, extension 61539.

145. Revenue-Raising Taxes: General Equilibrium Evaluation of Alternative Taxation in U.S. Petroleum Industries

Jaime de Melo, Julie Stanton, and David Tarr

Should the United States increase energy tariffs and taxes to help reduce the federal deficit? And if so, what combination of tariffs and taxes makes the most sense?

Should the United States increase taxes and tariffs in the energy sector to reduce its federal deficit?

The authors used a twelve-sector general equilibrium model to estimate the fiscal effects, and the effects on welfare and employment, of

• A 25 percent import tax on imported crude oil.

• A 15 percent excise tax on petroleum products.

• A combination of the two.

The excise tax would be the most efficient instrument for raising revenues.

The 25 percent import tariff would raise $7.3 billion in government revenues, while the 15 percent excise tax on petroleum products would raise $35 billion in government revenues.

Moreover, each dollar raised through a tariff on imports would come at a loss of 25 cents in welfare. Each dollar raised through the excise tax on petroleum products would come at a loss of only one cent in welfare

Not only would an import tariff on crude oil cause much dislocation (an estimated 153,000 workers would have to relocate), but it would pose trade policy problems.

A combination of excise taxes, subsidies, and import tariffs would be the least costly way (in terms of welfare) to raise $20 billion in government revenues. Taxing both sectors minimizes distortion-induced resource movements. The welfare cost of raising $20 billion is least when domestic petroleum production is subsidized by the combination of an import tariff and a small subsidy to counteract the distortion resulting from the tax on oil and gas, an input of the petroleum sector.

The optimal tax structure would involve a tariff and a small subsidy on petroleum products to counteract the distortion induced by a tax on oil — the most important input for petroleum products.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-065, extension 61539.

146. Exchange Rate-Based Disinflation, Wage Rigidity, and Capital Inflows: Tradeoffs for Chile, 1977-81

Timothy Condon, Vittorio Corbo, and Jaime de Melo

Chile's exchange rate-based stabilization program might have produced better results if capital inflows had been kept lower and if wage indexing had been more flexible.

Real exchange rate appreciation usually accompanies stabilization programs based on the exchange rate. One thing that causes the real exchange rate to appreciate is the capital inflows that follow liberalization of the capital account and the financial market.

Capital inflows cause the exchange rate to appreciate in part because of the resulting increase in expenditures. This appreciation is exacerbated if there is some price rigidity — as, for instance, when wages are indexed — and if control of the money supply is only partial. All these conditions existed during Chile's experiment with exchange rate-based disinflation between 1978 and 1981.

Simulating what might have been (using an econometric model), the authors study how exchange rate-based disinflation affects expenditure switching and reduction when wages are partially indexed in some segments of the labor market.

An alternative policy restricting capital inflows to a lower level would have led to a proportionately larger decline in absorption than in income — and the decline in absorption would have fallen disproportionately more on consumption than on investment.

The authors also show the extent to which a more flexible rule on wage indexing would have offset the adverse impact of lower capital flows on protected sector employment.

This paper, forthcoming in the *Journal of Development Economics,* is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-065, extension 61539.

147. The Private Sector's Response to Financial Liberalization in Turkey: 1980-82

Izak Atiyas

The private sector's response to the short-lived episode of liberalization in Turkey in 1980-82 did not live up to expectations.

Financial liberalization was carried out in a period when the nonfinancial corporate sector was in financial distress due to reduced profitability. The consequent emergence of substantial nonperforming loans in the banking sector, especially among smaller banks, created fierce competition for financial resources. The result was a rapid expansion of deposits and high real interest rates. Instead of forcing insolvent borrowers into bankruptcy, banks refinanced nonperforming loans as a way to prolong their own survival, and real credit to the private sector increased dramatically. Furthermore, the market mechanism turned out to be ill-equipped to induce the exit of insolvent banks and thereby increase the efficiency of allocating loanable funds.

An analysis of firm-level data reveals that nonfinancial corporations were subject to both an earnings shock (increases in costs relative to sales income) and an interest rate shock. Although the debt-to-asset ratios of profitable firms did not change, those of firms under distress actually increased, despite higher costs of borrowing.

The Turkish experience suggests that financial liberalization may not produce desired results when it occurs in a period of major macroeconomic realignments that adversely affect the profitability of the corporate sector, especially when it is implemented without an adequate regulatory framework.

This paper is a product of the Financial Policy and Systems Division, Country Economics Department. Please contact Wilai Pitayatonakarn, room N9-005, extension 60353.

148. Impact of the International Coffee Agreement's Export Quota System on the World's Coffee Market

Takamasa Akiyama and Panayotis N. Varangis

The new global coffee model shows which producing countries have gained and which have lost from the operation of the International Coffee Agreement — and what would happen if the Agreement were discontinued.

Ex-post simulations of the global coffee model over the recent period of operation of the International Coffee Agreement's export quota system, 1981-86, show the following. The quota system had a stabilizing effect on world coffee prices in the 1981-85 period. In 1986, when coffee prices increased sharply due to the drought in Brazil and the export quotas were suspended, prices would have been 24 percent higher in the absence of the quotas over the 1981-85 period. But the quotas have reduced export revenues (in real terms), except for such large producers as Brazil and Columbia. These countries gained from the scheme because they face very small or even zero marginal export revenues from increased exports, due to their large market shares.

In projections of the coffee market, with and without the export quota system, prices would be substantially lower during the first half of the 1990s if the quota system were suspended in 1990. But prices would recover in the second half of the decade as production and exports declined in lagged response to the very low prices of the first half.

For 1990-2000 most producing countries would be better off in total real export revenues with the export quota system. But the extent of the benefits vary considerably from one country to another. Low-cost countries — such as Costa Rica, Indonesia, the Philippines, and Papua New Guinea — could more than compensate for the lower world prices under the without-quota situation by large increases in exports. High-cost countries — such as Côte d'Ivoire, El Salvador, Ethiopia, and India — would suffer both from the lower prices and lower export quantities without the export quota scheme. The two largest producers — Brazil and Columbia — would also benefit from the extension of the quota scheme.

This paper is a product of the International Commodity Markets Division, Inter-national Economics Department. Please contact Dawn Gustafson, room S7-044, extension 33714.

149. Reflections on Perestroyka and the Foreign Economic Ties of the USSR

Bela Balassa

The exploitation of the Soviet Union's foreign trade potential would necessitate adopting a realistic exchange rate and increasing the foreign exchange retention quotas for direct and indirect exporters. It would also require reforms of domestic policies.

The first prerequisite is the establishment of rational prices. This objective may be pursued by adopting world market prices for raw materials and fuels, having the exporters of manufactured goods receive the prices they obtain abroad, setting domestic prices of imports at world market prices plus the tariff, and establishing market clearing prices for manufactured goods that are produced and sold domestically.

Eventually, world market prices would be brought to bear on domestic prices in conjunction with the liberalization of imports, but this will be a long process since the pent-up demand for imports cannot be satisfied from available foreign exchange. At the same time, given the limitations of raising fuel and raw material exports, which presently dominate Soviet foreign trade, it would be necessary to increase the exports of manufactured goods, where quality provides a constraint. To upgrade quality, there is need for foreign machinery, the purchase of which would require external borrowing and joint ventures. It would further be necessary to decentralize decisionmaking on foreign trade in enlarging the scope of firms that can directly trade abroad.

The decentralization of decisionmaking in foreign trade should be accompanied by decentralization in the domestic economy, to be complemented by the introduction of the profit motive and competition. In fact, rational prices, decentralization, profit maximization, incentives to managers, and competition are interdependent, and they will have to be pursued simultaneously for efficient resource allocation.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Norma Campbell, room S9-047, extension 33769.

150. Improving the Currency Composition of External Debt: Applications in Indonesia and Turkey

Ken Kroner and Stijn Claessens

The debt service ratio of many developing countries shot up when the dollar fell. The paper shows how developing countries can alter the currency composition of their external debt to minimize their vulnerability to fluctuations in international exchange rates.

Changes in exchange rates affect both the structure and level of a country's external debt. Much of Indonesia's debt was denominated in yen, for example, so the depreciation of the dollar since 1985 has increased the level of Indonesia's debt and reduced the dollar-denominated portion of that debt.

Indonesia's debt service increased from 10 percent in 1980 to 37 percent in 1986, largely because of the depreciation of the U.S. dollar and the fall in oil prices. Other countries had similar experiences.

Developed countries can hedge against exchange rate and commodity price changes by purchasing currency futures or other hedging instruments, but most developing countries do not have access to futures markets. They can, however, reduce their exposure by matching the currency composition of their external debt with the currency composition of the cash flows with which they service their debt.

Using advanced econometric techniques, the authors analyze what the currency exposures might have been in Indonesia and Turkey — and suggest borrowing portfolios that might be effective in hedging these countries' terms of trade against exchange rate fluctuations.

The results are promising for Indonesia, where the optimal currency portfolios might have resulted in a significant reduction in risk. The results are less satisfying for Turkey — although they do indicate possible research directions.

This paper is a product of the Debt and International Finance Division, International Economics Department. Please contact Leah Chavarria, room S7-033, extension 33730.

151. U.S. Trade Policy Towards Developing Countries

Bela Balassa

The U.S. market has generally been more hospitable to imports from developing countries than have the markets of other industrial countries.

The United States has often been criticized for protectionist measures taken against developing country products. Yet, average agricultural protection has remained practically nil in the United States over time while rising in the European Common Market and, even more, Japan. It further appears that manufactured imports from developing countries have increased much more rapidly, and reached higher levels, in the United States than in the European Common Market and, in particular, Japan.

The U.S.-Japan comparisons for manufactured goods do not conform to the data on the extent of nontariff barriers, as measured by the share of imports from the developing countries which are subject to such barriers. The solution to the puzzle lies in part in the inadequacies of data on the share of imports subject to nontariff measures for gauging the protective effects of such measures and in part in the reliance on formal measures of protection in the United States as against the use of informal measures in Japan.

More generally, one may explain the results obtained by reference to the openness of the U.S. market that has generally been more hospitable to imports from developing countries than have the markets of other industrial countries, particularly Japan. This has been the case even for clothing and textiles, where developing countries have in large part gotten around the restrictions by introducing new fibers and upgrading products.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Norma Campbell, room S9-047, extension 33769.

152. Subsidies and Countervailing Measures: Economic Considerations

Bela Balassa

The present rules on export subsidies and domestic subsidies should be revised to conform better to economic principles and to limit distortions in international trade.

To begin with, the illustrative list of export subsidies should be made definitive, with appropriate revisions. These revisions would eliminate the dual pricing of inputs and remove requirements of the physical incorporation of inputs for the exemption and remission of indirect taxes and import charges. Also, the exception made for primary products in regard to the prohibition of export subsidies should be eliminated.

Only measures which are specific to an enterprise or industry should be considered domestic subsidies. At the same time, it would be desirable to strengthen existing rules on domestic subsidies. This could be accomplished by prohibiting domestic subsidies that exceed a certain percentage of output value as well as domestic subsidies provided in cases where exports account for a large proportion of output.

Developing countries receive preferential treatment in the application of GATT rules on export subsidies. They are exhorted, however, to reduce or eliminate export subsidies which are inconsistent with their competitive or development needs. It is suggested that procedures be established to phase out export subsidies in the case of advanced developing countries as well as in cases when an industry of a developing country is internationally competitive.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Norma Campbell, room S9-047, extension 33769.

153. An Analysis of Debt — Reduction Schemes Initiated by Debtor Countries

Ishac Diwan and Stijn Claessens

Don't evaluate a debt-reduction scheme using present-value calculations alone. Look also for efficiency gains that allow both debtor and creditor to gain.

In evaluating the benefits of a voluntary debt-reduction scheme, look for efficiency gains that allow both debtor and creditor to gain. In particular, certain debt reduction operations can:

- Increase the incentives for growth in highly indebted countries.
- Allocate risk more efficiently between debtor and creditors.
- Signal the credibility of a country's willingness to "adjust" its economy to regain creditworthiness.
- Strengthen the creditors' coalition.

Market-based debt conversion is more likely to improve the debtor nation's welfare when:

- The opportunity cost of foreign exchange is low relative to world interest rates.
- There is a great probability of default (rescheduling) with a deadweight loss to the creditor — and when the cost and uncertainties of reschedulings are high and borne largely by the debtor.
- Private rather than public debt is swapped for equity investments.
- The country has no other way of signaling its commitment and willingness to adjust
- The country has an extreme case of debt overhang.

This paper is a product of the Debt and International Finance Division, International Economics Department. Please contact Leah Chavarria, room S7-033, extension 33730.

154. Forecasting, Uncertainty, and Public Project Appraisal

Jock R. Anderson

A measure of the probability of commodity price forecasts is not necessary for most project analysis, but it does give users a realistic view of the forecast's precision — and imposes a useful discipline on the forecaster.

Concerned about the most appropriate form of commodity price forecast to give project analysts, the author reviewed the literature on decisionmaking under conditions of uncertainty.

He concluded (in a 1983 report, published here in revised form) that the expected mean forecast is usually the relevant price parameter to use in analyzing public projects under conditions of uncertainty.

He further concluded that:

- Public project decisions should not be influenced by the expected variance around the expected mean price.
- Ideally, commodity price forecasts should be conditional forecasts — that is, conditional on forecasts of other variables, such as income and inflation. This requires forecasters of these variables to be explicit about the precision of their forecasts.

The author describes a general procedure for determining approximate magnitudes of risk adjustment expressed as a proportion of expected project return. The factors used in this approximation are (a) relative risk aversion, (b) relative size of project, (c) relative project risk, (d) the correlation of project return with national income, and (e) relative risk of national income.

Since this report's publication in 1983, the International Commodity Markets Division has regularly published simple probability distributions for its minerals, metals, and coal price forecasts. It also provides probabilities for its other price forecasts on request.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Audrey Kitson-Walters, room S7-053, extension 33712.

155. Measuring Adult Mortality in Developing Countries: A Review and Assessment of Methods

Ian Timaeus and Wendy Graham

In countries where full death registration is a distant goal, the best way to collect data on adult mortality is probably to combine sample community-based health reporting systems and single-round surveys in which respondents are asked about the survival of various relatives — including parents, first spouses, and siblings.

Reliable information about adult mortality — ideally, by age and cause for population subgroups — is important for population and health care planning and as an indicator of changes in human welfare. In most developing countries, data collection methods in the civil registration system and health services are woefully inadquate and methods for adjusting them apply only at the national level.

In the many developing countries where deaths are not fully registered, the best way to collect data on adult mortality is probably to combine sample community-based health reporting systems and single-round surveys in which respondents are asked about the survival of various relatives, including parents, first spouses, and siblings.

The authors argue that a few reliable indicators that cover the whole population are not only more affordable but more useful for health planning than a mass of information of doubtful accuracy and completeness.

One should not make inferences about adult mortality by extrapolating from information on child deaths. Only genuine measures of adult mortality are useful for planning. Several approaches — active sample registration systems, multi-round demographic surveys, sentinel site reporting, and demographic surveillance systems — have been fairly successful but expensive. Questions put to household heads about recent deaths in the household seldom yield useful data and should not be used in their present form.

Demographic research shows that age patterns of mortality are similar in all populations, so it is possible to estimate mortality rates with reasonable reliability from simple data on the proportions of surviving relatives reported by survey respondents. More research is needed to determine whether indices of mortality by cause can be similarly inferred from general proportionate measures of death from particular causes. Single-round surveys asking about family survivors have not always worked well, but they often yield good estimates of adult mortality at relatively low cost, are efficient in sample size, and based on straightforward questions about the respondents' lifetime experience.

The method's main limitation is that it provides rather broad, nonspecific measures of mortality — but these are adequate for allocation of resources, which is likely to be affected only by large differences. (Methods to elicit more specific information are still in the experimental stage.)

Certain questions need further investigation:

- Can additional information important for health planning be gathered in the context of surveys designed to measure levels, trends, and differentials in adult mortality?
- Can the indirect questions used in single-round surveys be used to investigate causes of death, on the one hand, and some of the social and economic consequences of adult deaths on the other?
- Can the measurement of adult mortality be integrated with efforts to improve our understanding of ill health in the surviving adult population?

This paper is a product of the Population, Health, and Nutrition Division, Population and Human Resources Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Sonia Ainsworth, room S6-065, extension 31091 (58 pages with figures).

156. Credit Cooperatives in Israeli Agriculture

Yoav Kislev, Zvi Lerman, and Pinhas Zusman

Many businesses suffered with the introduction of anti-inflationary policies in 1985. Only in agriculture did a whole sector — cooperatives — collapse financially. The reasons for this failure lie in the character and operating mode of Israeli cooperative credit.

In the last two to three decades, moshavim and kibbutzim developed intensively, adopted new technologies, reacted quickly to changes in market conditions, and established a network of farm services owned and operated by farmers and their representatives.

Financial cooperation helped make this intensive development possible and was effective when appropriate conditions prevailed. But in its strength lay dangers.

Cooperation in credit — together with a government policy of easy money and broad public support — also caused overexpansion and overinvestment. Warnings from within the government about overcapacity were overruled by political decisionmakers eager to show progress, however shortsighted. Debt grew to crisis proportions.

When macroeconomic conditions changed and the expansion of credit slowed down, the sector found itself trapped in financial impossibilities. Now cooperation ties farmers and organizations together and intensifies the dimensions of the crisis.

The authors recommend:

- Minimizing the extension of agricultural credit under preferential terms — and reducing subsidies.
- Continued (but limited) government commitment to aid farmers in financial distress caused by environmental fluctuations or temporarily depressed markets but not by other factors.
- Government participation in the creation of institutional structures (e.g., the revival of concentrated credit) to control overborrowing by farmers and farmer associations.
- Changes in cooperative laws and regulations that improve control over the cooperatives' financial integrity and strengthen the credit cooperatives' governance structure.

This paper is a product of the Agricultural Policies Division, Agriculture and Rural Development Department. Please contact Cicely Spooner, room J2-074, extension 37570.

157. A Policy Model for Tunisia with Real and Financial Flows

Martha de Melo, Marc Leduc, and Setareh Razmara

Country economists and developing country decisionmakers can use this model to analyze fiscal, debt, and incomes policies — and to derive implications for the exchange rate and for the availability of credit to the private sector. The extended *model generates a complete flow of funds for each time period, along with projections of national accounts in current and constant prices. Elements of the extended model can be suppressed, changed, or further extended, making it a flexible tool for country economic analysis.*

This model was developed to provide a macroeconomic framework for Tunisia's structural adjustment program and a flexible tool for further country economic analysis. As currently specified, it is designed to analyze fiscal, debt, and incomes policies, while deriving implications for the exchange rate and for the availability of credit to the private sector. Several policy experiments are carried out to illustrate this focus, and suggestions are offered for variations in model closure and detail.

The core model is a one-sector computable general equilibrium model that assumes imperfect substitution in production for export and domestic use — and imperfect substitution in expenditure on imports and domestically produced goods. It is based on a social accounting matrix and distinguishes government budgetary receipts and expenditures from such flows in the rest of the economy. A link with the Bank's country debt model is provided by assuming a fixed dollar resource gap for the projected years.

The extended model generates — for each time period — a complete flow of funds, along with projections of national accounts in current and constant prices. It distinguishes seignorage, or the growth in real money demand, from the inflation tax and can be used to define the growth in base money consistent with a target price level or, alternatively, an endogenous price level consistent with growth in base money.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

158. Labor Redundancy in the Transport Sector

Alice Galenson

Efforts to make the transport sector more efficient and financially viable almost always have serious implications for labor. What issues are involved and how should the Bank address them?

The issue of what to do with excess labor is critical to the success of any endeavor to improve the transport sector — whether that be improving railway financial indicators, upgrading port technology, rationalizing urban bus operations, or privatizing road maintenance.

Failure to reduce overstaffing leads to excessive wage bills. This exacerbates budget deficits and the losses of parastatal enterprises, which leads to cuts in investment or in the purchase of materials designed to reduce costs — further limiting labor productivity.

Moreover, because transport employs so many people, labor redundancy in the sector affects not only the agencies or enterprises concerned but the public sector as a whole.

This paper offers no blueprint for action, but categorizes the principal causes of redundancy, reviews the measures used to reduce overstaffing, and discusses the issues that have to be addressed. The report is organized around the following important questions, discussion of which highlights the need for research and for a method of evaluating the success of redundancy schemes.

- Is technical redundancy at the enterprise level equivalent to redundancy in a broader economic sense?
- Is a direct, but perhaps costly, solution — such as layoffs or forced retirement — preferable to attrition as a means of reducing the labor force?
- Is the solution chosen responsive to the causes of the problem?
- Once the immediate problem is resolved, are additional steps needed to prevent a recurrence?
- When falling demand for labor is inevitable, what changes are necessary to facilitate management response?
- If a short- or medium-term solution is not possible, what are the implications for choice of technology and organization of the labor force?

This paper is a product of the Transport Division, Infrastructure and Urban Development Department. Please contact Wendy Wright, room S10-050, extension 33744.

159. Current International Gas Trades and Prices

Kay McKeough

Unlike oil, natural gas is not widely marketed internationally, so uniform international gas prices do not exist, and news in the trade press is sporadic. This survey of prices and trades should prove useful to developing countries in understanding the price competition for natural gas and the trends in international agreements.

Certain trends stand out in this survey of Western European and North American gas markets and Japanese-Asian, Middle Eastern-African, and Latin American gas trades.

Prices for natural gas are usually locally based — depending on the costs of exploration, development, and transmission, and prevailing prices locally. The price in most international contracts is changed periodically, however, based on an escalator or price adjustment clause linked to prices for crude oil or oil products in the consumer country. So gas prices worldwide tend to fall within a prescribed range — $2.00 to $3.75 per million BTUs.

International gas prices fell less than expected in the 1985-86 oil crash — especially in Japan — because contract prices were linked to artificially high official prices of crude oil rather than to spot oil prices, which better reflect the market. In the future, LNG and pipeline gas export prices are more likely to be linked to actual or spot prices than to official oil prices.

The price of LNG imports has dropped in Japan. Japan now pays an average CIF price of $3.60 per million BTUs. In Europe the trend has been to negotiate gas import prices downward to about $2.25 per million BTUs to make gas competitive. (For comparison, the price of Canadian gas at the U.S. border is about $2.00 per million BTUs.

As for global trends in gas trades, new pricing terms (such as flexible take-or-pay arrangements) and contractual arrangements (such as open access, or common carrier, transportation systems) that emerge in one country may soon be copied in others. With a take-or-pay provision, a purchaser must pay for a contracted volume (or fraction) of gas even if it cannot take the gas. Under a common carrier agreement, a pipeline company provides transportation only, without buying and reselling the gas in its own name or discriminating among buyers and sellers. The common carrier concept has already taken hold in the United States. It is now becoming an issue in Europe, where the gas monopolies have always rebuffed it.

This paper, a product of the Energy Development Division, Industry and Energy Department, has also appeared as an Industry and Energy Department Working Paper. Please contact Mary Fernandez, room S4-037, extension 33637.

160. Evaluating the Performance of Public Enterprises in Pakistan

Mary M. Shirley

Even managers critical of Pakistan's new performance evalua-tion system consider its targeting and bonus system a powerful incentive to improve efficiency.

In 1983 Pakistan initiated a performance evalua-tion, or "signaling," system for industrial public enterprises (IPEs). The system, which has been applied to most of Pakistan's IPEs and is administered by a special unit outside the civil service, involves:

- Selecting performance evaluation criteria.
- Assigning criterion values.
- Negotiating achievement targets for the enterprise.
- Evaluating results.
- Providing bonuses based on the evaluation (up to three months salary for A grade).

The focus is on operating efficiency, not financial returns, and on motivating management by excluding factors beyond the control of managers.

Even managers critical of the system (including some who did not receive bonuses) cite the targeting and bonus system as a powerful incentive to improve efficiency.

To strengthen the system, the author suggests:

- Adjusting standard profits to exclude items that distort results (such as nonoperating income and depreciation) and that take administered prices into account.
- Rewarding managers who reduce losses as well as those who increase profits.
- Allocating bonuses more selectively — on the basis of individual performance. This requires developing adequate personnel evalua-tion systems.
- Increasing competition and managerial autonomy (particularly decisions on personnel and credit) to cut costs and increase efficiency.
- Studying the impact of policy and regulatory decisions on IPEs — for example, the costs of social objectives, price controls, and delays caused by central decisionmaking.

The paper concludes with suggestions of ways to simplify and adapt the system for use in other countries.

This paper is a product of the Public Sector Management and Private Sector Development Division, Country Economics Department. Please contact Rose Malcolm, room N9-053, extension 61708.

161. Commodity-Indexed Debt in International Lending

Timothy Besley and Andrew Powell

Initially commodity-contingent debt contracts appear to work best when a group of creditors have control over the total amount lent, rather than when a single lender acts in isolation. Should a multinational institution take the lead in developing a market for them?

Superficially, commodity-indexed bonds resemble a combination of a debt and a contract in futures. They are particularly useful in a country dependent on a single commodity for which prices are volatile.

These financial instruments — which explicitly introduce risk management considerations into the credit market — involve a tradeoff between gains in risk-sharing and a deterioration in incentives (or an increased likelihood of default).

The precise costs and benefits of commodity-contingent contracts in international lending depend on the model employed. Commodity indexing seems to work best when:

- The borrower is heavily concentrated in a commodity or set of commodities for which prices are so volatile that income fluctuates greatly.
- A small, well-informed, coordinated set of creditors have control over the total amount lent (a good argument for a public body taking the lead in developing a market for this type of contract).
- Information is fully available about how borrowed funds are used and thus whether conditionality is meaningful.
- The borrower has no control of the index used in the contingent contract.
- There is a low "beta" between returns on the commodity and returns from the rest of the lender's portfolio.

Many of the arguments made for a commodity-dependent borrower may also be made for countries subject to other risks — for example, a country that has borrowed largely in dollars and is thereby exposed to high currency risks.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Julie Raulin, room S7-069, extension 33715

162. Inflation in Argentina: Stop and Go Since the Austral Plan

Miguel A. Kiguel

Why did the Austral plan fail to curb inflation on a sustained basis? Sophistication in the design of a stabilization program is no substitute for addressing fundamental imbalances, contends the author — and price controls, improperly used, can make the problem worse.

The Austral plan, launched in 1985, was Argentina's most recent stabilization strategy for reducing high inflation. A heterodox program, it combined orthodox components — tight fiscal policy and monetary restraint — with less conventional wage and price controls.

The Austral plan failed to bring inflation down on a sustained basis, but it provided useful lessons about the design of heterodox stabilization programs, the difficulties of sustaining this type of effort, and the consequences of failure.

Lesson 1, contends the author:

Sophistication is no substitute for addressing fundamental imbalances. Sustained curbing of inflation requires a long-term effort. Income policies can help bring inflation down quickly, but must be accompanied by sustained monetary and fiscal efforts. Tight money cannot be sustained in the presence of a large fiscal imbalance.

Fiscal reform and a restructuring of public sector enterprises were imperative, but were not undertaken.

Lesson 2:

To be effective, price controls must be used cautiously and only temporarily. They should gradually be removed when authorities see that the underlying inertial forces have been subdued.

The authorities did not think through how to liberalize prices — when, how, and under what condition to remove price controls — without bringing back inflation.

The chief advantage of controls is also their chief drawback. They can quickly reduce inflation, leading authorities to underestimate serious underlying imbalances. The repeated use of controls works against stabilization: anticipating freezes, firms set high prices. Anticipating re-imposition of controls, firms accelerate price increases. Controls should be removed gradually, when supplies generally are in excess, and tight fiscal and monetary policies should remain in place during "flexibilization." This was not done in Argentina.

In the Austral plan, the removal of controls coincided with a flexibilization in the management of the main anchors of the system. Gradual decontrol of private prices followed by a sequenced adjustment in wages, public sector prices, and the exchange rate would have had a better chance of success, the author argues.

The removal of controls left the economy with no nominal anchors — no nominal variable to anchor the rate of inflation. Given necessary adjustments in prices and the exchange rate, money should have played a more active role and the authorities should have pursued a policy of untying devaluations from past inflation.

This paper is a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department. Please contact Raquel Luz, room N11-059, extension 61761.

163. How Infrastructure and Financial Institutions Affect Agricultural Output and Investment in India

Hans P. Binswanger, Shahidur R. Khandker, and Mark R. Rosenzweig

Prices matter — but so do banks, markets, and infrastructure.

How do the decisions of farmers, financial institutions, and government agencies interact and affect agricultural investment and output in a region — and to what extent are these "actors" influenced by a region's location and agroclimatic endowments (for example, rainfall or the soil's moisture-holding capacity).

This paper is an attempt to quantify the relationships of key factors, using district-level time-series data from India.

Agricultural opportunities in a district are seen as the joint outcome of the agroclimatic endowments of the district and new technology that becomes available to it. Better agroclimatic opportunities improve output (relation 1), but also increase the economic return for a private farm investment — say, in a tractor (relation 2). Greater private profit in a well-endowed region induces farmers to press for more investment in infrastructure (relation 3). Financial institutions find it more profitable to locate where there is more demand for capital and more repayment capacity (relation 4) and where good infrastructure reduces their costs (relation 5). Private agricultural investment and use of input is more profitable the better the agricultural opportunities (relation 2), the better the infrastructure (relation 6), the cheaper the cost of financial services (relation 7), and the more favorable government's price and interest policies (relation 8). Exactly the same factors affect the output supply (relations 9, 10, 11). Traditional approaches to production function estimate the direct impact of capital stocks (investment) and input use on output (relation 12), ignoring many of the factors discussed here.

After comparing data on these factors, the authors conclude that:

- Agroclimatic factors continue to govern the rate at which districts can take advantage of new agricultural opportunities, and govern public, bank, and private investment decisions.
- The availability of banks (credit) is more important than the real interest rate as a factor in aggregate crop output and farmers' demand for fertilizer. Rapid bank expansion in an area increased fertilizer demand by about 23 percent, rates of investment in pumps 41 percent, in milk animals 46 percent, and in draft animals about 38 percent. Despite their impact on investment and fertilizer use, the impact of banks on output appears to be fairly small (nearly 3 percent).
- Unsurprisingly, commercial banks prefer to locate in well-watered areas where the risk of drought or flood is relatively low. Bank expansion is facilitated by government investments in roads and regulated markets, which improve farmers' liquidity and reduce banks' and farmers' transaction costs.
- In the 1970s, expansion of regulated markets contributed 4 percent to growth of agricultural output and 17 percent to demand for fertilizers. Expansion of electrification increased output 2 percent in a decade by increasing investment levels for pumps and fertilizer. A primary education added a large 8 percent to crop output over the decade, primarily by increasing fertilizer demand nearly 30 percent.

This paper is a product of the Agriculture Operations Division, Latin America and Caribbean Country Department II. Please contact Josefina Arevalo, room I7-100, extension 30745

164. Intersectoral Financial Flows in Developing Countries

Patrick Honohan and Izak Atiyas

The business sector in developing countries relies on external funding for about half of its investment. If the availability of investable funds is to be freed from its dependence on the vagaries of the international capital markets, developing country financial systems will have to attract more household savings with new types of instruments and adequate returns.

A review of flow of funds data for 17 developing countries reveals that most years in most countries:

- The household sector is a net lender, lending on average 7 percent of GNP — and more in countries that are more open and have higher income. The household sector typically saves more than twice what it needs to finance its accumulation of real assets, lending the rest to other sectors.
- The business sector is a net borrower, borrowing on average 7 percent of GNP. About half of real capital formation by business is externally financed.
- The government sector is sometimes a net lender but more often a net borrower.

Intersectoral flows in developing countries are achieved mostly through the banking system. The rest of the financial system is typically relatively underdeveloped. Thus savings are channeled from the household to the business sector much more by means of bank deposits and loans than through issue of equities.

The foreign sector cannot be relied upon as a passive or residual provider of funds to the domestic economy. A shortfall in foreign financing or an increase in government borrowing typically force the business sector to reduce its investment.

Households and the government typically do little to absorb foreign financing shocks by adjusting their net lending.

The vulnerability of the business sector to the availability of foreign funds points up the need for the financial sector in developing countries to find more ways to attract domestic savings to finance worthwhile investment projects. This will require that savers are ensured a fair share of the returns on investment projects — which means realistic interest rates for savers and the development of financial instruments that allow savers to share in high-risk high-yield projects.

This paper, a background paper for the 1989 World Development Report, is a product of the Financial Policy and Systems Division, Country Economics Department. Please contact Wilai Pitayatonakarn, room N9-005, extension 60353.

165. Shifting Patterns of Comparative Advantage: Manufactured Exports of Developing Countries

Alexander J. Yeats

Labor-intensive goods are the strongest export items for developing countries — and the United States is the developing countries' biggest export market.

In 1965 the National Bureau of Economic Research predicted that developing countries would specialize in the manufacture and export of labor-intensive goods — and prepared a list of those goods.

A study of actual exports for 1965-1986 revealed that with few exceptions, export performance of those labor-intensive goods was superior in developing countries — which increased their market shares for those items despite generally declining shares of world trade.

The United States absorbed nearly 55 percent of labor-intensive products in 1986 ($70.2 billion, compared with only $34.4 billion in the EC). And more than 40 percent of total U.S. imports of labor-intensive goods came from developing countries (compared with only 12 percent in the EC).

Many of the products the National Bureau identified as labor-intensive remain so, and therefore remain suitable for production and export by developing countries.

Clothing, footwear, leather products, wood manufactures, and some primary metal manufactures became relatively more labor-intensive — so producers in industrial countries can expect increased competition from the developing countries in these products in the 1990s.

This paper is a product of the International Trade Division, International Economics Department. Please contact Jean Epps, room S8-037, extension 33710.

166. Achieving and Sustaining Universal Primary Education: International Experience Relevant to India

Nat J. Colletta and Margaret Sutton

Funding, local accountability, good teacher training, and upgrading poorer schools are all important. But promoting female enrollment may also require more organized day care — to free young girls from child care duties.

To achieve its goal of full enrollment of children aged 6 to 11 by 1990, and children aged 6 to 14 by 1995, India must increase its enrollment from less than 80 percent to more than 100 percent in 10 years. Sustaining universal primary education also means reducing the high dropout rate (over 50 percent by grade 5) to near zero for eight grades.

To reach its targets, India must:

- Back up policy with funding — in particular directing central government funds to areas and states with insufficient resources to improve facilities, quality of instruction, and local language resources.
- Encourage local accountability of teachers and administrators to communities. Encouraging good local school management (coordinated with state and central management) as well as community participation promises the best administrative oversight of schools.
- Improve quality in the poorer schools and states to increase participation and retention rates in the primary schools. This requires well-trained teachers — motivated both by better pay and in-service training (which the introduction of educational technology will facilitate).
- Make curricula and exams relevant to local students (emphasizing basic knowledge and reasoning skills over academic knowledge).
- Make a special effort to provide organized day care to release young girls from their child-care responsibilities.

This paper is a product of the Population, Human Resources, Urban and Water Operations Division, Asia Country Department IV. Please contact Mary Philiph, room D10-015, extension 75366.

167. Do Price Increases for Staple Foods Help or Hurt the Rural Poor?

Martin Ravallion

In the short run the rural rich in Bangladesh are likely to gain, and the rural poor to lose, from an increase in the relative price of food staples in a food producing economy. But in the long run the welfare of a typical poor household will be neutral to such price increases (after allowing for wage adjustments), and the poorest households will benefit somewhat.

The effect on the poor of changes in the price of staple foods is a central issue in debates on development policy.

One argument is that while low food prices clearly benefit urban groups, the rural population that depends primarily on food agriculture is likely to be worse off. High food prices may benefit the rural poor by raising rural wages, even when the poor are net demanders of food.

The counterargument is that the rural poor are net demanders of food. In rural South Asia, for example, they do not produce enough food for their own consumption, typically supplementing their own farm incomes with earnings from agricultural labor. Under conditions of partial equilibrium, they cannot benefit from high prices.

There is little agreement about how responsive agricultural wages are to food prices, so the author has examined the effects of changes in food prices under induced wage responses for rural Bangladesh based on an econometric model of agricultural wage determination.

The results:

Partial equilibrium analysis suggests that the rural rich are likely to gain, and the rural poor to lose, from an increase in the relative price of food staples.

Steady-state equilibrium analysis suggests a different result: that the rural rich will probably gain from such a price increase, but in the long run the welfare of a typical poor household is more likely to be neutral to changes in the price of rice.

The long-term effect on welfare will vary among the poor, however. In the long run, welfare in the poorest households would seem to improve more from such a price increase than would welfare in households that are less poor

Typically, three or four years must pass before a price increase for rice stops having a negative effect on the welfare of the poor.

This paper is a product of the Agricultural Policies Division, Agriculture and Rural Development Department. Please contact Maggie Zee-Wu, room J2-084, extension 37589.

168. Technological Change from Inside: A review of *Breakthroughs!*

Ashoka Mody

The reviewer gives high marks to Breakthroughs!, *a book describing the way individuals conceived and developed new products and services, and then set about bringing them to market.*

Remember life before Post-its? You probably used scotch tape (made by 3M) to paste your note where you wanted it. What about putting the paste on the paper? If you were working at 3M, say, would it occur to you?

In *Breakthroughs!*, the authors detail the development of Post-it Note Pads and other products and services that have come to be re- garded as indispensable (how did we ever do without them?) These products now seem ordinary. In many cases the technology was readily available. But what counts, the book says, is the concept, and even then, the route to commercial success requires considerable ingenuity and corporate support. Who were these innovators and what problems did they have to tackle before the market applauded their breakthrough?

The book presents case studies of 12 products and services; five consumer durables (cars, VCRs, Walkmans, microwave ovens, Nike athletic shoes); three services (Federal Express, Chem Lawn, Nautilus); two health care items (Cat Scans, Tagamet); an intermediate product (polyethylene); and the Post-it Note Pads.

While the authors applaud the tenacity and vision of the individual, they give some of the credit to the firms' marketing and manufacturing expertise. Ironically, the reviewer says, there isn't much concern for economic principles. Amana officials priced the microwave oven at $499 because they concluded that "It's about the same size as an air conditioner. It weighs about the same. It should sell for the same."

This paper is a product of the Industry Development Division, Industry and Energy Department. Please contact Wendy Young, room S4-101, extension 33618.

169. Financial Sector Reforms in Adjustment Programs

Alan Gelb and Patrick Honohan

Reform programs call for more prudential supervision of financial institutions but fewer restrictions on interest rates, the direction of credit, and financial innovation generally. The planning of financial reform must be predicated on an appropriate macroeconomic framework, without which reform efforts can result in costly failure.

The recent upsurge of concern with financial sector policy issues in developing countries arises primarily from three characteristics of their financial systems:

- Many of the financial institutions in developing countries are extremely unsound.
- There is often excessive control over interest rates and the direction of credit, amounting to repression of the financial systems.
- The domination by banks of the financial system in many countries has led to a need for institution-building to enrich the range of services that the financial sector can provide.

The typical financial sector reform package involves policy changes to increase the power of centralized decision-making in some areas and to reduce it in others.

For prudential regulation and supervision, reforms seek strengthened information systems, stronger and more detailed regulations, and closer credit supervision. At the level of the intermediaries, reforms seek improved procedures, some of which (credit policies, loan review, and management information systems) are natural complements to improvements at the central level.

But insofar as the relative cost and availability of credit are concerned, the typical reform program calls for a reduction in government control, and tries to broaden the range of options for finance. Called for are increases in, and ultimately liberalization of, interest rates, as is a reduction in the scope and severity of restrictions on bank lending and financial innovation generally. A reduced burden of taxation, implicit and explicit, of the financial system is often required.

Many needed financial sector reforms are of an institutional nature requiring the acquisition of scarce skills. For instance, development finance institutions may need to reconsider their fundamental objectives and their entire method of operating. These changes take time to become effective, and it is not clear that the typical quick-disbursing policy-based operation is the ideal medium for effecting them.

Experience has shown the importance of the links between financial sector policies and performance and the macroeconomic situation. Without an adequate degree of macroeconomic stability, financial sector reforms can fail, with serious consequences. Therefore the planning of a financial sector reform must be predicated on an appropriate macro-policy framework.

This paper is a product of the Financial Policy and Systems Division, Country Economics Department. Please contact Maria Raggambi, room N9-031, extension 61696.

170. General Training Under Asymmetric Information

Eliakim Katz and Adrian Ziderman

Firms are unlikely to provide their employees with general training that makes them more desirable to competing firms. They are more likely to provide such training if it is difficult for other firms to measure the value of the training.

One widely accepted conclusion in the human capital literature on training is that firms will finance only firm-specific training because it is non-transferable to other firms. Firms will not be willing to finance training in general (transferable) skills.

In this paper it is argued that a recruiting firm will possess only limited knowledge of the training level in general skills acquired by workers in other firms. Hence a worker with transferable skills who changes employer can expect to suffer a cut in wages for a transition period while his level of productivity is being evaluated and recognized. Such a worker has no incentive to move as long as the present value of the loss in earnings during the probationary period is greater than the present value of the loss incurred in remaining with the training firm at a wage below the market-level for his skill. In such cases this constraint on worker mobility will make it feasible for firms to assume a share in investment in the general-skills training of their workers — a result that qualifies the traditional theory of on-the-job training as developed by Becker.

This result may have some important implications for policy in countering the deleterious effects of such market imperfections as minimum wage legislation and a restricted capital market, on the supply of trained labor with general skills. It also suggests that training certification, in facilitating interfirm mobility, discourages on-the-job training by firms.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Cristobal, room S6-001, extension 33640.

171. The Cost-Effectiveness of National Training Systems in Developing Countries

Christopher Dougherty

Schools should be responsible for teaching basic skills and the theoretical aspects of vocational training, and employers should be responsible for the practical end — with on-the-job training supplemented in some cases by training at training centers. Institutionalized pre-employment training for entry-level jobs is less cost-effective — despite wishful thinking that it provides an easy solution to the problem of mass youth unemployment.

Which is better: school-based training (vocation education), center-based training, or on-the-job training (such as apprenticeship schemes)? Controversy about choice of training mode has been aggravated by three factors:

• Failure to recognize that vocational-technical training covers a broad spectrum, from ap-plied science education to job-readiness training. Advocates and critics of a particular training mode who find themselves arguing at cross purposes often have different points of this spectrum in mind.

• Insufficient appreciation of the training that is, or could be, provided — for example, by the private sector in the form of in-service training (apprenticed or otherwise) and training provided by proprietary schools, suppliers of equipment, and other sources.

• A tendency by planners to overestimate greatly the need for extended pre-employment training for entry-level jobs. This bias is reinforced by wishful thinking that training can provide an easy solution to the problem of mass youth unemployment.

Drawing on a comprehensive survey of international experiences and issues, the author concludes that:

• Under favorable conditions (including adequate financing), any training system can be effective. Considering the time and money it takes to execute radical change, it makes more sense to improve the performance of existing training systems than to try replacing them. The design of a training system is not so important as its ability to evolve in light of experience.

• Planners should consider dividing responsibility between schools, employers, and training centers. Schools should be responsible for basic skills and the theoretical end of the vocational training spectrum, and employers should be responsible for the practical end — after the individual has entered the labor force.

• Ideally, for some occupations, employer-trained trainees should attend training centers (which may or may not be schools) part-time to add to their theoretical knowledge — both during initial on-the-job training and later in their working life, as the need arises.

• Full-time institutionalized training aimed at bringing the trainee to job readiness is likely to be less cost-effective for a number of reasons — and in many countries would place an intolerable burden on public funds.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Cristobal, room S6-001, extension 33640.

172. The Effects of Peru's Push to Improve Education

Elizabeth M. King and Rosemary T. Bellew

Peru's effort to expand public education from the mid-1950s to the 1960s has narrowed the educational gap between rural and urban residents, males and females — but male urban students are still likely to advance furthest in school. At the primary level, student achievement is greatly improved by such material inputs as desks and textbooks.

From the mid-1950s to the 1960s, the government of Peru undertook a major expansion of public education, increasing the number of schools, requiring primary schools that offered an incomplete cycle to add grades, and increasing school inputs (principally teachers and textbooks).

The authors examine the effects of Peru's educational policies, and the effects of family background and community characteristics on the schooling levels of a sample of adults. Data on males and females were analyzed separately by birth cohort, using a sample of 5,644 females and 5,241 males aged 20 to 59.

The authors found that:

• The government's policy to expand the schools played a major role in raising education levels and narrowing the gap between rural and urban residents, and males and females.

• The impact of parents' years of schooling and occupations on the educational levels of their children lessened over time as the supply of schools expanded throughout the country — an indicator that the link between socioeconomic background and access to schools had weakened.

• The relative effect of parents' education differed for sons' and daughters' schooling. Fathers' education had twice as great an effect on sons' schooling as mothers' education; for daughters, both parents' education had equivalent, strong positive effects.

• Primary schools expanded rapidly even in rural areas, so rural residence did not adversely affect the primary schooling of males. Urban or rural residence did matter greatly for females, however, suggesting less desire by rural parents to invest in the schooling of their daughters.

• Urban residence at the age of 13 remained an important determinant of educational attainment because of the great disparity between urban and rural areas in availability of secondary schools.

• The availability of material school inputs, such as textbooks and desks at the primary level, had a large positive effect on final school levels.

This paper is a product of the Education and Employment Division, Population and Human Resources Department. Please contact Cynthia Cristobal, room S6-001, extension 33640.

173. Hospital Management Staffing and Training Issues

Julio Frenk, Enrique Ruelas, and Avedis Donabedian

Hospitals dominate health care, so making hospitals more efficient is crucial to better health care delivery. The authors suggest an agenda for research.

Hospitals dominate health care in most parts of the world and for a variety of reasons are likely to continue being a key factor in the overall performance of the health care system. Any efforts to improve this performance must therefore give greater hospital efficiency the highest priority.

After discussing key issues of managerial, clinical, and production efficiency, Frenk, Ruelas, and Donabedian suggest an agenda for research, which would include two types of research:

- Observational studies that document levels of hospital performance and correlate them with organizational design and environmental variables. It is especially important to devise and test sensitive, specific indicators of managerial, clinical, and service production efficiency.
- Comparative intervention studies that would introduce planned change in hospitals and assess the consequences — using control groups as well as cost-benefit and cost-effectiveness analyses.

The mostly highly recommended subjects for research, in order of priority, are:

- Good descriptive studies of the hospital system and the main aspects of organization design — to chart, for example, the formal and informal relations among managers and clinicians, the frequency of different arrangements for internal communication, types of departmentalization, and management systems.
- The systematic design, testing, and study of explicit quality monitoring and assurance systems. Such studies should include the analysis of interactions between managers and clinicians, especially as they constrain clinical autonomy and decision making.
- Studies to determine which social, personal, organizational, and educational factors account for managerial skill and success in managing a hospital — to get the information needed for the recruitment and training of successful hospital managers.
- Studies of the structure and dynamics of medical labor markets, to improve understanding of why there is an oversupply of doctors in so many different countries.

This paper is a product of the Health and Nutrition Division, Population and Human Resources Department. Please contact Sonia Ainsworth, room S6-065, extension 31091 (37 pages with charts).

174. Trade Restrictions with Imported Intermediate Inputs: When Does the Trade Balance Improve?

Ramón López and Dani Rodrik

When imports are predominantly intermediate inputs — as they are in most developing countries — import restrictions act as a supply shock to the economy and therefore cannot always be relied on to improve the trade balance.

The author's model demonstrates that when imports are predominantly intermediate inputs — as they are in most developing countries — import restrictions cannot always be relied upon to improve the trade balance. Such restrictions act as a supply shock to the economy.

Unless nontraded goods are intensive users of imported intermediates, the general-equilibrium consequence of import restrictions is a large enough reduction in export supplies to swamp the direct effect of the restrictions. The result is a deterioration in the trade balance.

One can check the robustness of the author's model results with extensions that may capture more realistic features.

One extension is to consider real wage rigidity and unemployment. If capital in the short run is sector-specific, the net effect of a small tariff remains ambiguous — because an increase in the domestic price of imported inputs will cause a fall in employment and thus a decrease in real income.

Another extension is to consider domestic production of the imported intermediate goods. Such production is likely to be an important factor in medium- and high-income countries, but much less so in very poor countries. The income effect of the tariff will still be negative, though less so.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Maria Ameal, room N8-069, extension 61466 (15 pages with tables).

175. An Integrated Model of Perennial and Annual Crop Production for Sub-Saharan Countries

Robert D. Weaver

This microeconomic model of household choice reflects the fact that crop production in Sub-Saharan Africa is dominated by smallholders who allocate household labor across annual and perennial crops and, in some cases, to wage labor markets.

Crop production in Sub-Saharan Africa is dominated by smallholders who allocate household labor across annual and perennial crops and, in some cases, to wage labor markets.

Weaver has developed a microeconomic model of household choice which is consistent with observed characteristics of Sub-Saharan agricultural systems in terms of:

- Integrated production of annual and perennial crops (since households often produce both annuals and perennials). This interaction has been ignored in past models.
- Price uncertainty in markets that may be affected by government intervention.
- The potential for off-farm employment.
- Household consumption of crops produced on the farm (on-farm inventories are usually nonexistent).
- Household consumption of nonfood goods, school fees, and so on.

Weaver considers variations is the model to establish their implications. These variations include differential buying and selling prices, fixed subsistence consumption constraints, participation in wage market labor, smuggling in response to goverment price control, and parallel markets with penalties for smuggling.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Aban Daruwala, room S7-040, extension 33716.

176. Credit Rationing, Tenancy, Productivity, and the Dynamics of Inequality

Avishay Braverman and Joseph E. Stiglitz

When credit to farmers is rationed, changes in technology may lead to a long-term increase in sharecropping and then to reduced productivity. The development of effective *rural financial institutions would reduce the likelihood of these negative effects.*

Why, when given the same resources, might productivity be lower on farms operated through sharecropping than on owner-run farms, even though sharecropping is an efficient institution in economies in which land is unequally distributed? The reason is that sharecropping, much less wage contracts, cannot overcome the divergence of interests between those who till the land and those who own it. Only land redistribution can do that.

Braverman and Stiglitz present notes toward a general equilibrium theory of land tenancy that suggests how changes in technology and in publicly provided infrastructure can affect the equilibrium distribution of land in countries where credit to farmers is rationed.

They argue that the prevalence of share tenancy is directly related to inequality in the distribution of wealth — and of landholding in particular. But inequality should be viewed as an endogenous variable, affected by decisions of both large landholders and peasants about (1) techniques and (2) forms in which to hold their wealth. These decisions and their consequences are affected in turn by changes in technology and in the rural infrastructure.

When credit to farmers is rationed, changes in technology can increase the inequality in landholdings — with a long-term increase in share tenancy. This in turn might reduce productivity, at least partially offsetting the initial improvements.

Braverman and Stiglitz suggest that the development of effective rural financial institutions would reduce the likelihood of these negative effects on equality and productivity. They caution though that past attempts in creating such institutions largely failed because of a lack of accountability and of enforcement procedures.

This paper, a product of the Agricultural Policies Division, Agriculture and Rural Development Department, is forthcoming in Pranab Bardhan, ed., *The Economic Theory of Agrarian Institutions*, Oxford University Press. Please contact Cicely Spooner, room J2-084, extension 37570.

177. Cash Flow or Income?: The Choice of Base for Company Taxation

Jack M. Mintz and Jesús Seade

Cash flow and equity income are two alternative bases for company taxation. Before a country implements a cash-flow tax, it must first sort out problems arising from administrative complexities — particularly tax evasion — from international tax coordination and competition, and from the problems of transition.

Cash flow and equity income are two alternative bases advocated for company taxation. Recent literature has stressed the merits of the cash-flow tax because of its simplicity and its neutral impact on capital and financing decisions. But cash flow taxation merits a closer look in terms of:

- Administrative complexity.
- International tax coordination and competition.
- Transition problems.

International issues and administrative complexities — particularly tax evasion — present problems that must be sorted out before a country decides to implement a cash-flow tax.

The motive for adopting a company tax depends in part on the type of personal tax that is desired and the degree to which a country may wish to withhold income from foreigners. But the question arises in policy debate about whether a particular tax base can be effectively implemented, taking into account administrative weaknesses and requirements — as well as other (especially international) considerations.

In a closed economy — especially one that relies on a personal consumption tax — the cash-flow tax seems a simple, efficient form of company taxation, administratively straightforward and neutral with regard to investment decisions. The more complicated equity-income tax is harder to defend in a closed economy.

Few countries have had experience with cash-flow taxes, however, so it is impossible to predict what administrative and other practical difficulties such a tax will pose

In a country with a large foreign-owned sector, the equity-income tax may be the best form of tax for withholding income from foreigners. This is particularly true if the tax is credited against foreign taxes and so, in certain circumstances, has little effect on investment. Otherwise, the tax is distortionary.

A case can be made for the cash flow tax in an open economy as well. Sometimes — for example, with petroleum and mining royalties, which are meant to be taxes on resource "rent" — taxes are not credited at all against foreign taxes. The cash flow tax has the virtue of being neutral, while continuing to withhold rents accruing to foreigners. (A value-added tax on a destination basis does not do so, since the tax is paid only by residents.)

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359 (45 pages).

178. Tax Holidays and Investment

Jack M. Mintz

The tax holiday — designed to encourage capital investments — actually penalizes long-term investments in some countries with high inflation rates and relatively fast writeoffs for depreciable capital.

The tax holiday — an incentive frequently used in developing countries to encourage capital investments — offers benefits for short-term investments but could in fact penalize long-term capital investments.

For some countries with high inflation rates and relatively fast writeoffs for depreciable capital, the effective tax rate on long-term investments is higher during the tax holiday than after.

For one thing, the tax law may require assets to be depreciated during the holiday. If so, the value of tax depreciation writeoffs — which is not indexed for inflation — may be lower than the true economic cost of depreciation.

For another, the tax benefit of nominal interest deductions associated with debt financing of capital are of no value to the firm during the holiday — whereas after the holiday they may be quite beneficial.

After estimating the effective tax rates on capital for holiday and post-holiday investments, the author concludes that for some countries the effective tax rate on long-term capital is highter during the holiday than after.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359.

179. Public Sector Pricing in a Fiscal Context

Christopher Heady

If administered prices are to generate revenues, they should deviate from marginal cost and should be determined on the basis of their economy-wide effects, without regard to financial targets. It is better to raise prices above marginal cost through taxes than by raising the price received by the enterprise.

Administered prices should deviate from marginal cost if they are to be used as instruments to generate revenue.

The analysis is based on the Bank's two-step approach to public sector pricing: first calculating marginal cost, and then adjusting it to account for other factors. The aim is to show how those adjustments should be made to account for fiscal concerns. Such adjustments are not widely used at present.

The appropriate basis for pricing in the first step, the author contends, is a weighted average of short and long-term marginal costs.

Deviations from marginal cost in the second step are shown to depend on their revenue-raising, distortionary, and distributional effects.

Imposing financial constraints may be an inefficient method of achieving fiscal objectives. It is better to decide prices on the basis of their economy-wide effects without regard to financial targets — and then, if necessary, to impose financial targets that are consistent with those prices.

The author argues that it is better to raise prices above marginal cost through taxes than by raising the price received by the enterprise.

Metering problems prevent direct observation of the use of publicly produced goods — a problem that particularly affects road user chargers. The author discusses how to set charges in the face of metering difficulties, stressing the need to set uniform charges and to make indirect charges on inputs.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359 (55 pages).

180. Structural Changes in Metals Consumption

Boum-Jong Choe

An extended model of metals demand suggests that the downturn in the intensity of metals consumption during the last 15 years can be explained largely by changes in input variables, including capital and energy, rather than by changes in the structure of demand.

For 15 years the metals market has been characterized by slow growth — in some cases, even decline — in consumption.

To test the proposition that structural changes in demand were the main cause of the slowdown, the author — drawing on U.S. data — used an extended metals demand model that recognizes energy, labor, capital, and other materials as major inputs.

The traditional model explains metal consumption in terms only of output and the prices of metal and its substitutes. It is inadequate to address the issue of structural change because it ignores other important factors of production, such as energy, which have experienced dramatic changes.

With the extended model, the null hypothesis of no structural change cannot be rejected for most metals. With the conventional model, the null hypothesis of no structural change is strongly rejected.

Results with the extended model show that the downturn can be explained mostly by changes in the input variables, particularly such nonmetal inputs as capital and energy, which are much more important cost items than metals and have undergone drastic changes over the period.

This paper is a product of the International Commodity Markets Division, International Economics Department. Please contact Sarah Lipscomb, room S7-062, extension 33718 (25 pages with charts and tables).

181. Public Finance, Trade, and Development: What Have We Learned?

Johannes F. Linn and Deborah L. Wetzel

Failure to consider explicitly the many intricate relations between trade and public finance policies will often lead to inconsistent and unsustainable policies, thus hindering a country's trade and development prospects.

The interdependence of trade and public finance policy are important considerations in designing macroeconomic policy, public revenue policy, and public expenditure policy. For example:

- A competitive real exchange rate, improved trade performance, and trade liberalization are all built on the base of sound fiscal management. Trade policies and trade liberalization may, however, have a negative effect on fiscal balances, which must be considered and compensated for.
- Improving competitiveness and reducing protection is likely to involve reform of both trade tariffs and domestic taxation. Greater reliance on efficiently designed user charges will also help make a country more competitive internationally
- Correct priorities should be set for public expenditures — whether they are rising or falling — to ensure that they are supportive of trade and of tradable goods production.

This paper is a product of the Office of the Vice President, Development Economics. Please contact Maureen Colinet, room S9-029, extension 33490 (28 pages with tables).

182. Latin America's Experience with Export Subsidies

Julio Nogués

The failure of export subsidies, particularly in Argentina, should remind us to distinguish what is possible from what is likely. In Latin America the money would be better spent on infrastructure, health, *and education.*

Twenty years ago, it was believed that export subsidies would produce more diversification and better export performance. This has not happened. Why?

In most cases, export subsidies were not supported by more open import policies — so subsidies reduced only marginally the anti-export bias of Latin American countries. Unstable real exchange rates have also hurt exports.

Export subsidies appear to have improved exports in Brazil, which also liberalized imports, significantly stabilized real exchange rates, and promoted other policies conducive to export growth. Yet Mexico, after reducing import barriers, also enjoyed improved exports — with minimum export subsidies, and with apparently lower social costs than Brazil experienced.

Export subsidies have failed in other Latin American countries — and particularly hurt development in Argentina, where fraud, corruption and rent-seeking have been rampant.

Participants in the current Uruguay Round of international negotiations seem to be seeking two different goals on subsidies and countervailing measures (CVMs). Supporters of subsidies want to make it more difficult to introduce CVMs; countervailers want more stringent rules on subsidies. Both subsidies and CVMs are viewed as good policies by their users. But empirical evidence does not support these policies, and export subsidies and CVMs entail other costs to the societies using them.

The failure of export subsidies, particularly in Argentina, should remind us of the importance of distinguishing what is possible from what is likely, contends the author. The likelihood of subsidies improving exports is low, when they are applied in a context of high import protection and unstable real exchange rates.

Finally, export subsidies compete with other government programs and — especially considering their failure rate — should be dismantled in this period when the welfare of Latin Americans has declined dramatically. The money would be better spent on infrastructure, health, and education projects.

This paper is a product of the International Trade Division, International Economics Department. Please contact Salome Torrijos, room S8-033, extension 33709 (38 pages with tables).

183. Private Investment in Mexico: An Empirical Analysis

Alberto R. Musalem

In 1985, Mexico shifted to a growth strategy based on private investment and exports rather than on import substitution and public sector investment. The policy implications of this study are that to increase investment, Mexico should follow policies aimed at reducing investment adjustment costs and increasing factor mobility and credibility in the program of structural reforms rather than at subsidizing investment.

Mexico's past growth strategy — based on import substitution and public sector investment — proved unsustainable in the face of the financial crisis and the drop in oil prices. Moreover, with strong linkages between public and private investment, cutbacks in one forced cutbacks in the other. The result was a magnified cost of adjustment.

To resume sustainable growth, the Mexican authorities adopted a new strategy whereby private investment and exports rather than import substitution and public sector investment would lead growth. However, in the past, investment responded extremely slowly to changes in the incentive system. This behavior may reflect high adjustment costs, uncertainties, risks, and credibility problems induced by past macroeconomic instability. Also, distortions in the factor and goods markets may have impaired the mobility of resources. Consequently, structural reform began with the 1985 trade reform, and was strengthened by the privatization of public enterprises, economic deregulation, and tax and financial sector reforms.

Further trade liberalization may be needed — removal of the remaining quantitative restrictions, particularly on imports of used capital goods — to encourage investment, both directly (through the price effect) and indirectly (as an instrument to promote trade and capacity utilization).

To the extent that trade liberalization is not accompanied by policies that facilitate real exchange rate depreciation, investment would be affected in two ways — first, profitability in the tradeables sector would be reduced in the short run, increasing adjustment costs and impairing resource mobilization. Second, expectations of real depreciation will build up as economic agents anticipate that the long-run equilibrium level of the real exchange rate consistent with import liberalization is higher. As a result, destabilizing capital outflows may increase real interest rates and reduce confidence in the government's ability to sustain trade policies.

As stabilization efforts continue, expectations of inflation will be reduced, increasing the demand for money and therefore the real interest rate. As the government continues its policy of relying less on the inflationary tax, however, favorable developments may follow:

- Financial deepening will reduce intermediation costs and spreads, increase access to financial services, and stimulate investment.
- The unanticipated risk of capital losses on holding domestic assets will decline, thereby increasing their liquidity and demand, and reducing the real interest rate.
- The improved macromanagement will make relative prices less volatile, will reduce uncertainties, risks, and adjustment costs, and will increase the short-term investment response.

This paper is a product of the Trade, Finance, and Industry Division, Latin America and the Caribbean Country Department II. Please contact Lerick Spear, room I8-127, extension 30081 (32 pages with charts and tables).

184. Women and Forestry: Operational Issues

Augusta Molnar and Götz Schreiber

Involving women in forestry projects often makes the difference between achieving or not achieving project objectives. Moreover, involving women need not be costly and almost always produces a higher return on project investment.

Women are major actors in forestry throughout the developing world. Women and children are the primary collectors of fuel and fodder for home consumption and for sale to urban markets. This alone gives women a major role in the management and consevation of renewable forest resources. When convinced of the utility and practicality of a forest improvement or management scheme, women can be a powerful lobby to persuade their entire household or community to invest the resources necessary to make the scheme work. Involving women in forestry projects often makes the difference between achieving or not achieving project objectives, particularly for the long-term sustainaility of interventions.

Under a project in Senegal, in some villages both women and men were consulted about their species preferences. Women favored a mix of forage and shade species to go with the income-producing species most favored by men. Tree survival was much higher in these villages, because the women responsible for watering the trees (given the gender-specific division of labor) were more diligent than the women who had no influence on the choice of species.

Because of their traditional reliance on forestry resources, women are often the chief repositories of knowledge about-the use and management of trees and other forest plants. They also make up much of the labor force in forest industries: nurseries, plantation establishment, logging, and wood processing. Nor are they exclusively subsistence-oriented: their agroforestry preferences include commercial fruits and (pole-generating) cash-crop trees as well as fuel and fodder species.

This paper provides operational guidelines — intended to be taken on mission for guidance during field work:

- What information to get and issues to address during project preparation, preappraisal, and appraisal — as well as during project supervision, monitoring, and evaluation.
- How to analyze project costs and benefits with women in mind.
- How to design specific forestry interventions.

Designing interventions in the forestry sector with gender in mind is likely to change the scope and economic potential of investments. Where women's groups have taken an active role, the choice of species has been broader and has led to a greater diversity of products for sale or home use. Attention to the nutritional potential of forests can improve diets and thereby increase the long-term enterprises — both wood and nonwood — can be developed to place equal emphasis on women's roles in marketing and production, increasing employment and income.

This paper is a product of the Women in Development Division, Population and Human Resources Department. Please contact Mila Villar, room S9-127, extension 33752.

185. Uniform Trade Taxes, Devaluation, and the Real Exchange Rate: A Theoretical Analysis

Stephen A. O'Connell

Theoretically, uniform trade taxes (uniform tariff-cum-subsidies) are equivalent in effect to devaluations of the commercial rate in a dual exchange system — if one disregards smuggling and customs fraud. When either form of illegal trade is factored in, this equivalence is broken, and the real exchange rate may actually appreciate in response to an increase in the uniform trade tax rate. When illegal trade takes the form of customs fraud, the rate for exportables will depreciate, but the rate for importables will appreciate.

The author of this paper analyzes the macroeconomics of uniform trade taxes — uniform tariff-cum-subsidies, or UTCSs — by comparing UTCS policies as an alternative to devaluation of the exchange rate.

The model he sets up establishes a basic equivalence between UTCS schemes and devaluation of the commercial rate in a dual exchange rate system. This equivalence disappears when smuggling and customs fraud are incorporated into the model.

In the flexible price, full employment world of the model, a UTCS scheme can change the real exchange rate if either smuggling or customs fraud is going on. What is striking, however, is that when smuggling is factored in, using a UTCS to raise the relative domestic price of traded goods may backfire and actually appreciate the real exchange rate. If customs fraud is factored in, the real exchange rate will appreciate for importables but will depreciate for exportables.

The author suggests further extensions to his model for a reasonably full understanding of the macroeconomics of UTCS schemes. First, he would incorporate distortionary means of government finance into the analysis of illegal trade. One of the primary results of a UTCS scheme, when there is illegal trade, is to transfer income from the public to the private sector. This revenue shock is likely to add to the welfare burden of the UTCS scheme, when the government cannot levy lump-sum taxes.

Second, he would add investment to the model and investigate the relationship between investment response, the real exchange rate, and fiscal revenues under a UTCS when the government goes not have lump-sum taxes. The tariff component of a UTCS satisfies the government's relative price and revenue objectives simultaneously, but the export subsidy component brings out a conflict between the two objectives. The government may therefore have an incentive to renege on the export subsidy component of the package.

Finally, a parity change (devaluation) or a UTCS scheme could be used to alleviate transitional unemployment due to sticky nominal wages in the short run. The author suggests examining the tradeoffs between the direct contractionary effects of the two policies and their expansionary effect through the tradeables product wage.

This paper is a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department. Please contact Aludia Oropesa, room N11-055, extension 61758 (47 pages with charts).

186. The Uruguay Negotiations on Subsidies and Countervailing Measures: Past and Future Constraints

Patrick A. Messerlin

Countervailing actions are likely to be a poor instrument for limiting subsidies for the same reason that antidumping actions are likely to be a successful way to support cartelization. To strengthen disciplines on countervailing measures would be meaningless without narrowing the definition of dumping and strengthening disciplines on antidumping procedures.

The Uruguay Round Negotiating Groups on countervailing and antidumping procedures share many common issues. This is not accidental, contends the author, but mirrors the way import-competing firms have become the driving force of antidumping and countervailing procedures set up under the Tokyo Round.

The cases initiated since 1980 by the United States and the European Community illustrate what Tumlir has called the "tempting accommodation" in lawmaking: ill-defined (economically and politically ambiguous) laws producing "do-something" regulations with unexpected long-term effects. The result in this case is a fundamental imbalance in the use of the antidumping and subsidy codes. U.S. and EC firms have increasingly used countervailing and antidumping procedures as a protectionist tool against the same few industries.

Countervailing actions are likely to be a poor instrument for limiting subsidies for economic reasons inherent in the profit-maximizing behavior of the complaining firms — not necessarily because of poorly designed provisions in the code. Economic forces impose limits on what can be expected from a subsidy code. For the same reason, antidumping actions are likely to be a successful way to support cartelization.

For many economists, first-best policies rely on self-disciplines on subsidies. This goal is politically difficult to achieve. The price paid to get wider support for stricter disciplines on subsidies seems to be to tolerate countervailing procedures and impose strong disciplines on their use.

However, to strengthen disciplines on countervailing measures would be meaningless without narrowing the currently pervasive definition of dumping and strengthening disciplines on antidumping procedures. This is related to the fact that U.S. and EC firms have increasingly used antidumping procedures as a substitute for countervailing actions.

The author underlines the importance of disciplines in antidumping procedures by noting the links between antidumping, safeguard procedures, and the Multifibre Arrangement.

This paper is a product of the International Trade Division, International Economics Department, Please contact Salome Torrijos, room S8-033, extension 33709 (35 pages with charts and tables).

187. Linking Wages to Changing Output Prices: An Empirical Study of 13 Industrial Countries

Menahem Prywes

In many countries, wages are indexed to consumer prices, protecting the real income of workers in the short run. To protect employment against external shocks that lower profits, developing countries with outward-oriented development strategies should consider linking wages to the value-added output price.

A shock that lowers profits depresses employment less when wages are flexible in terms of the value-added output price. This kind of flexibility allows a country to remain competitive in world markets when a shock to profits lowers its value-added output price.

In many countries, wages are indexed to consumer prices, thus protecting the real income of workers in the short run. Some industrial countries link wages more closely to the value-added output price. In Japan, for example, bonus schemes link wages to profits. The value-added output price is built from data on wages and profits, so the bonus scheme links wages implicitly to the value-added output price.

Estimates of the elasticity of wages in terms of the value-added output price are high, significant, and of a theoretically plausible magnitude in three industrial countries that perform well in world markets: Japan, Germany, and Switzerland. This suggests that developing countries with outward-oriented development strategies should promote this kind of wage flexibility.

The output price elasticity of wages also appears to be high in two industrial countries that produce primary products: Canada and Australia (although estimates for these countries are lower in quality). This may reflect the difficulty of passing wage increases on to higher commodity prices. Wage flexibility may be particularly important for developing countries exporting primary products.

This paper is a product of the International Economic Analysis and Prospects Division, International Economics Department, Please contact Joseph Israel, room S12-005, extension 31285 (27 pages with tables).

188. International Differences in Wage and Nonwage Labor Costs

Luis A. Riveros

Labor costs declined significantly in most developing countries in the 1980s. The impact of declining labor costs on manufacturing employment was statistically significant — and bodes well for the growth of nontraditional exports.

The ratio of nonwage labor costs (for social security, pensions, vacation days, severance compensation, and the like) to direct wage costs is proportionately higher in Europe and Latin America than in Asia and Africa — largely because workers there are protected more by regulations.

The distortionary growth of labor costs because of increasing nonwage costs is not common in the less developed countries (LDCs), however. The author of this paper found that international differences in labor costs are attributable largely to differences in labor productivity and capital-labor ratios.

He also found that labor costs declined significantly in almost all LDCs in the 1980s, and that the impact of declining labor costs on manufacturing employment was statistically significant — and bodes well for the growth of nontraditional exports.

This decline was not accomplished through deregulation of the labor market — the ratio of nonwage costs to labor earnings remained persistently significant — but mainly through macroeconomic factors, particularly inflation and nominal devaluations.

The opportunity cost of labor was distorted more by nonwage costs in the poorest LDCs, where the small size of the formal sector contrasts with the relatively high degree of worker protection. The countries that do better in manufacturing exports seem to have both relatively few labor market regulations and, in the long run, rising labor costs.

Adjustment programs that favor export promotion and higher labor mobility should probably also favor reducing government intervention that increases labor costs. Nonwage costs do not seem to be the most distortionary labor market factor in LDCs, however. Job security laws and regulations — by reducing worker mobility between labor and agriculture — permit manufacturing labor costs to increase. This presents a major difficulty in carrying out industrial adjustment based on opening up the economy and realigning the exchange rate.

International differences in labor cost levels are important, especially when one compares LDC and industrial economies. But differences between labor cost levels in terms of per capita output are not so large. This suggests the importance of different capital-labor ratios.

This paper is a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department, Please contact Raquel Luz, room N11-061, extension 61762 (56 pages with tables).

189. The Treatment of Companies Under Cash Flow Taxes: Some Administrative, Transitional, and International Issues

Emil M. Sunley

Cash flow taxes eliminate many of the problems of the corporate income tax, but they have significant administrative, transitional, and international problems, especially for developing countries.

The author begins his discussion of the cash flow tax by outlining the major administrative and compliance issues. There are problems with the tax because of the numerous possibilities for gaming the system (particularly if financial flows are left out of the tax base), the appropriate treatment of employee benefits and business entertainment, and the treatment of money-losing companies. In addition, the cash flow tax has the same problem as the corporate income tax in dealing with companies that do not use above-board accounting procedures.

The paper goes on to discuss the problems involved in the transition from a corporate income tax to a cash flow tax. First, carryover problems arise because income deferred under the income tax may never be taxed under the cash flow tax and income previously taxed by the income tax may be taxed a second time. Second, changes in asset prices arise because changes in the tax law affect expected after-tax cash flows, causing either windfall gains or losses. There are ways around these problems but they cause further ones. Sunley outlines these secondary problems and possible solutions to them but concludes that there is no easy way to orchestrate a totally smooth transition.

The international aspects of imposing a cash flow tax are most troublesome. After a summary of the major international income tax rules, Sunley discusses how the cash flow tax treats inbound investment, outbound investment, and exports and imports. It is likely that a cash flow tax imposed by a developing country would not be creditable against the U.S. income tax. In addition, it would be difficult to provide a border tax adjustment for a cash flow tax.

The paper concludes by proposing that the tax base be defined in terms of financial income with certain specified adjustments, such as depreciation and extraordinary items. The proposal is in some depth, including a simplified system of tax depreciation.

This paper is a product of the Public Economics Division, Country Economics Department. Please contact Ann Bhalla, room N10-061, extension 60359 (42 pages).

190. Macro Performance Under Adjustment Lending

Riccardo Faini, Jaime de Melo, Abdel Senhadji-Semlali, and Julie Stanton

Bank-Fund adjustment lending apparently improves economic performance mostly by relieving the foreign exchange constraint and allowing for the purchase of crucial foreign intermediate goods.

The authors of this paper used simple statistical methods to measure the effect of adjustment lending (AL) on economic performance. Using eight economic indicators, they relied on traditional "before-after" comparisons of AL recipients and a control group of 63 countries.

How have countries under adjustment lending performed? AL countries improved their external position, generating enough of a trade balance surplus to service their external debt. Fiscal (and inflation) indicators deteriorated, however, a sign that macroeconomic imbalances remained. Finally, growth rates fell, reflecting deteriorating terms of trade and the difficulties of reducing absorption to the required degree.

On nine economic indicators, AL recipients fared better overall than the non-recipients — although improvement varied between 53 and 63 percent, depending on the classification. Some improvements were mild, some statistically insignificant. Improvements are stronger for a group of 12 AL recipients that received 3 or more adjustment loans.

Results appear stronger when the analysts control for the potentially negative effects of the external environment on performance: AL recipients appear to do better than the control group. The control group is small, however, so the results are not statistically robust.

The intensity of Bank-Fund involvement contributes significantly to better performance for most indicators — except that intensity of Bank-Fund lending correlates negatively (and significantly) with the share of investment in GDP. Gven the positive correlation of lending intensity with GDP growth and import growth, it would appear that Bank-Fund lending improves economic performance mostly by relieving the foreign exchange constraint and allowing for the purchase of crucial foreign intermediate goods.

Adjustment lending was intended to elicit a supply response: for a given expenditure-switching policy, the trade balance was expected to improve more. Alternatively, AL recipients were expected to achieve a given improvement in trade balance (controlled for changes in terms of trade) at less cost than non-recipients in terms of forgone growth. Correlations for a group of 30 countries that received their fist Bank adjustment loan by 1984 show that AL recipients experienced higher average growth and improved their trade balance more than non-recipients. The tradeoff between growth and improvement in external balance, however, was the same for both groups.

This paper is a product of the Public Economics Divsion, Country Economics Department. Please contact Maria Ameal, room N8-073, extension 61466 (35 pages with charts and tables).

191. Openness, Outward Orientation, Trade Liberalization, and Economic Performance in Developing Countries

Sebastian Edwards

The paper provides a critical review of the existing empirical literature that deals with the relationship between trade orientation and economic performance. Using a model that avoids the shortcomings of most current measures of trade orientation, the author finds strong support for the hypothesis that, other things being equal, countries with a less distorted external sector grow faster than countries with a more distorted external sector.

A major shortcoming of the current policy debate is its increasingly dichotomized, ideological tone. In the last few years, not only have positions become more rigid, but there is also increasing confusion about the meaning of key concepts such as liberalization and outward orientation. The author detects three main shortcomings in the current debate:

• By thinking in dichotomies, we have lost the notion of trade regimes as existing along a continuum.

• We no longer understand "liberalization" as a process that can operate at different intensities.

• A number of writers confuse "liberalization" with "laissez faire," with the result that people sometimes advocate what seem to be contradictory positions (e.g., favoring openness and an outward orientation at the same time as opposing liberalization).

To rescue the policy debate trade regimes can be thought of as existing along a continuum, with the terms

• *Outward* and *inward* orientation denoting whether policy emphasis is on the domestic market or international trade.

• *Trade* and *closed* describing the degree of an economy's openness. At one (the closed) end of the spectrum would be *import substitution* (deliberate discrimination against imports that compete with domestically produced goods). At the other end would be *export promotion*. In the middle would be an *open economy* — one with a neutral trade regime, in which trade represents a large share of GDP. A *liberal regime* would fall between open economy and export promotion.

• *Liberalization* being defined as a process that makes greater use of the price system, makes the trade regime more transparent, and brings domestic prices closer to world prices. The vagueness of this definition disappears as soon as we provide information about the initial trade regime and the intensity of the liberalization process.

Is there a relationship between how liberalized a trade regime is (how close it is to laissez faire) and economic performance? Is there an "optimal" trade regime? If so, is that optimal regime independent of a country's specific characteristics?

The author discusses the new theories of economic growth and assesses their usefulness for analyzing the relationship between trade orientation and growth in the developing countries. Using a growth model that relates trade orientation to the ability to absorb technology from the rest of the world, he tests the model using an index of trade orientation that is (1) objective, (2) allows for a continuum of regime, and (3) comparable across countries.

The results — using cross-country data — strongly support the hypothesis that, other things being equal, countries with a less distorted external sector grow faster than countries with a more distorted external sector.

This paper is a product of the Trade Policy Division, Country Economics Department, Please contact Maria Ameal, room N8-073, extension 61466 (60 pages with charts and tables).

192. Inflation, Price Controls, and Fiscal Adjustment in Zimbabwe

Ajay Chhibber, Joaquin Cottani, Reza Firuzabadi, and Michael Walton

Inflation always has a monetary dimension, but managing inflation is not a simple question of monetary management. Other factors to contend with are the indexation process (including policies on wage and price controls), the level of financial composition of fiscal deficits, and supply conditions. How these interact has crucial implications for policy design, as shown in this paper on Zimbabwe.

Adjustment programs typically include not only fiscal reform but also price liberalization, devaluation, and trade policy reform — including reduced subsidies. Authorities implementing such programs commonly fear the potential inflationary effects of a combination of devaluation, reduced subsidies, and price decontrol.

Given this combination, a simplistic monetarist diagnosis of inflation is insufficient. If inflation — even if only in the short run — can rise because of devaluation or reduced subsidies, attempts to control it completely may require fiscal and monetary control so great as to cause recession. If cost-push factors arising from the adjustment program generate inflation, it may be necessary to allow for the inflation and plan for a slower adjustment program, one that is more acceptable socially. The design and pace of a successful adjustment program hinge on the correct diagnosis and management of inflation.

This empirical study of Zimbabwe is the first in a series that will include studies on Ghana, Cote d'Ivoire, and Malawi. The study addresses the impact of government policies on inflation and price changes. The authors characterize the situation in terms of the three main transmission mechanisms for inflation: the fiscal-monetary process; direct cost-push factors; and real factors.

All of these are important in Zimbabwe, but there are often conflicts. Low food or utility prices keep prices down but lead to higher subsidies and hence to higher deficits, the financing of which can increase inflation. Similarly, exchange rate devaluation is often viewed as inflationary, but insufficient exchange rate adjustment can lead to both parallel markets and a tight import constraint, resulting in lower growth of output.

The authors conclude that one must always go beyond a simple monetary account of the inflation process even if inflation always has a monetary dimension. Other significant factors are management of the indexation process (including policies on wage and price controls), the level and financial composition of fiscal deficits, and supply conditions.

This paper is a product of the Public Economics Division, Country Economics Department, Please contact Ann Bhalla, room N10-061, extension 60359 (74 pages with charts and tables).

193. Voluntary and Involuntary Lending: A Test of Major Hypotheses

Peter Nunnenkamp

The reversal of net international capital flows since 1982 is attributable more to reduced inflows of new bank credits than to higher debt service obligatiwons. Credible adjustment efforts would increase the creditors' willingness to lend new credits.

The author of this paper assessed the empirical relevance of various conjectures about what determined whether creditors would issue loans to developing countries in the 1980s. He found that:

With the onset of the debt crisis, private creditors began to honor debtors who improved economic performance and policies — providing higher capital flows especially where investment ratios were higher. (The counterhypothesis that policy-induced improvements in the economic performance of problem borrowers resulted in reduced net transfers must be rejected.)

Private creditors were not prepared to compensate for unfavorable developments in the world market with additional lending. Small borrowers who did not benefit from involuntary lending had great difficulty attracting further capital inflows when they were hit by external shocks.

Standard sovereign risk arguments dominate when net transfers are to be explained. Creditors are not inclined to throw good money after bad, as some believed would happen. As default risks increased, so did their reluctance to increase net transfers. In deciding whether to continue lending, banks relied particularly on the effectiveness of trade sanctions.

Private creditors are reluctant to lend additional funds partly because most problem borrowers have not introduced consistent, far-reaching economic policy reform. Borrowers who want to reestablish their creditworthiness must intensify their adjustment efforts. Creditors are unlikely to honor policy efforts to which the debtor country's commitment is not credible, particularly if it seems the country will ultimately decide to default on its debt. Creditors are unlikely to be responsive if they lack information or suspect that borrowers will refuse to service external debt they are able to pay.

The author proposes creating an internationally binding legal system which, by reducing sovereign risks, would encourage private creditors to resume lending. One way to rule out sovereign risk would be to make transfer agreements self-enforcing — by supplementing the traditional credit contract with a third-party contract that is easily enforceable within the creditor's domestic legal system. Under this third-party contract, the debtor would be bound to pay a high premium in the case of willful default. This would discourage debtors from suspending debt-service payments they are able to pay.

If debtors are given more incentive to meet debt obligations through more efficient economic policies, creditors will be more likely to share the credit risks triggered by unfavorable developments in the world market, according to the author. As the distribution of credit risks between debtors and creditors improves, the capital outflow from developing countries will be checked.

This paper, prepared for the conference "Dealing with the Debt Crisis," is a product of the Debt and International Finance Division, International Economics Department. Please contact Leah Chavarria, room S7-033, extension 33730.

194. Efficient Debt Reduction

Jeffrey Sachs

Debt reduction poses collective action problems that cannot be efficiently handled in the framework of voluntary market-based approaches. Instead we need concerted debt restructuring, based on below-market interest rates — perhaps linked with credit enhancement by offical creditors — to provide the most direct mechanism for efficient, equitable sharing of losses.

It is now widely acknowleged that under certain circumstances debt reduction can improve the welfare of both creditors and debtors. A large debt overhang can lead to inefficiencies that worsen the debtor's economic performance, thereby diminishing the creditor's expected returns. Leading banks and international financial institutions recognize this, but actual debt reduction has been remarkably limited. Bolivia remains the sovereign debtor that has been able to negotiate a fairly comprehensive debt reduction arrangement — and results have been favorable.

Why has there been so little progress in debt reduction?

Debt reduction poses important collective action problems that cannot be efficiently handled in the framework of "voluntary, market-based" approaches currently championed by the World Bank and the rest of the creditor community. Important distortions arise in the negotiating process because of the special position and incentives of the money-center banks and the recognized readiness of the official creditor community to contribute funds to avoid a breakdown of creditor-debtor relations.

Meaningful debt reduction requires an appropriate institutional setting to overcome collective action problems. In the domestic economy, bankruptcy law provides the framework for organizing the collective interests of the creditors when a debtor is distressed. No such institutional framework yet exists in the international setting. Under current incentives, voluntary debt relief is bound to mean no more than a continuing nibbling away at the edges of the debt overhang, without real relief for the debtor or real benefits for the creditors.

The author recommends "concerted debt restructuring," based on below-market interest rates, rather than "voluntary" debt reduction. With concerted relief, all banks would participate jointly on a fairly equal basis. The existing debt would be rescheduled at below-market interest rates, with the rates based on various indicators of ability to pay and decided in negotiations between the debtor country and creditor banks. The interest payments could be made more secure for the banks by various forms of credit enhancement, including collateralization, guarantees by the official creditor community, and escrow accounts in which export earnings are deposited for the purpose of future debt servicing. This approach would provide the most direct mechanism for an efficient, equitable sharing of losses among the creditor banks.

This kind of interest-rate reduction could be easily managed in the context of an international debt facility. Whatever the approach, meaningful debt reduction will require the active participation of the international community.

This paper, prepared for the conference "Dealing with the Debt Crisis," is a product of the Debt and International Finance Division, International Economics Department. Please contact Leah Chavarria, room S7-033, extension 33730.

195. How Has the Debt Crisis Affected Commercial Banks?

Harry Huizinga

Top commercial banks seemed to have weathered the debt crisis. It remains to be seen whether their current strength and stability will help re-establish normal credit relationships between private banks and the developing countries.

To what extent can commercial banks absorb loan losses from the less-developed countries (LDCs)? Some losses by private creditors are likely to be part of any resolution of the debt crisis, and such losses are implicit in some of the many proposals for dealing with the crisis.

Bank stock prices for U.S. commercial banks already reflect a high discount on (and the low quality of) developing country debt — so no major U.S. bank is likely to fold if it gets a return on its LDC debt consistent with the prices of LDC debt on the secondary market. The top banks in Canada, France, Japan, the United Kingdom, and West Germany are less heavily exposed to LDC debt than their U.S. counterparts — and thus correspondingly less imperiled by the debt crisis than the U.S. banks.

The relative safety of most of the top creditor banks renders their insistence on full servicing of the LDC loans less urgent and should in principle open the door to partial debt forgiveness. It also, however, enables the banks to boycott the by now routine schedulings and new money packages and at the same time to withstand the accounting consequences of such a move.

Some form of debt forgiveness may in practice lead to a quicker resumption of private capital flows to the LDCs and increased investment in the developing countries. But such flows may never again reach the avalanche proportions of the 1970s, which resulted from the unique coincidence of sluggish economic growth in the OECD, large OPEC surpluses, and a number of regulatory changes in the creditor countries that directed bank lending overseas.

It may take time, but through a combination of self-interest and public policy the current impasse in the debt crisis should be overcome. This may be done partly through large-scale debt swaps sponsored by private or public agencies. Debt swaps are already being implemented bilaterally in small steps and through a variety of instruments, including debt conversions and buybacks.

This paper, prepared for the conference "Dealing with the Debt Crisis," is a product of the Debt and International Finance Division, International Economics Department. Please contact Leah Chavarria, room S7-033, extension 33730.

196. A Review of Alternative Debt Strategies

Eugene L. Versluysen

Seven years later, international debt strategy has not moved beyond crisis management. If conditions worsen, the political obstacles to formal, involuntary debt forgiveness may have to be removed.

This comprehensive review of debt strategies includes recent debt proposals that recommend alternatives to market-based debt workouts. Proposals differ widely depending on whether they seek new lending or broad-based debt relief and forgiveness. Their common, explicit aim is to reduce the negative net resource transfers to the creditors and to ease the debt burden of the highly indebted countries.

Commercial creditors and official circles in industrial countries have so far shunned the idea of interest concessions or debt forgiveness to highly indebted countries. Governments have a political problem using public funds ("taxpayers' money") to finance debt concessions and/or to protect banks from country defaults, particularly in an environment of budgetary austerity. Banks fear that large-scale involuntary debt reduction would entail substantial write-offs which — if they exceeded existing loss provisions and eroded capital — could harm highly leveraged banks. There is also ideological resistance to the idea of resolving a "market" problem — debt recovery by private commercial banks — by nonmarket means. And both official and market creditors point to the risk of moral hazard — that formal concessions would "reward bad conduct," penalizing countries that have persevered with adjustment. These arguments tend to gloss over the increasing politicization of the problem in debtor countries themselves.

So far creditors have stayed one step ahead of the debtors. Banks have trimmed their exposures and accumulated large provisions to reduce their vulnerability to defaults; creditors have increasingly recognized the pragmatism of selective voluntary debt reduction; industrial countries and multilateral agencies have stepped in with sizeable emergency loans and lending commitments to deal with isolated crises with individual debtors (most recently in Mexico and Argentina). The international community has raised the stakes as needed but after seven years the debt strategy has not yet moved beyond crisis management.

If Latin American debtors revive the idea of a "debtor cartel," or if social or economic conditions worsen (with a world recession, for example), crisis management may no longer suffice. A purely political decision may then be necessary to remove obstacles to formal, involuntary debt forgiveness. The amount to be forgiven under such conditions could turn out to be higher than if more timely action had been taken.

This paper, prepared for the conference "Dealing with the Debt Crisis," is a product of the Debt and International Finance Division, International Economics Department. Please contact Ereney Hadjigeorgalis, room S7-038, extension 33729.

197. Differentiating Cyclical and Long-Term Income Elasticities of Import Demand

Fernando Clavijo and Riccardo Faini

An import demand model that distinguishes between cyclical and long-term responses supports the claim that import demand in developing countries is more responsive to short-term than to long-term fluctuations in income.

How do imports react to cyclical and secular (long-term) factors? the evidence suggests that cyclical income elasticities of import demand are generally higher than long-term elasticities — particularly for basic materials and semi-manufactured goods.

Traditional models for import demand generally underestimate the cyclical response in imports, and overestimate the long-term response. This has important implications for forecasting short-term import flows in developing countries. For example, estimates of income elasticity using a traditional import model developed by Pritchett and Bahmani-Oskooee average 1.4 and 1.2 respectively.

Clavijo and Faini's model suggests a cyclical elasticity averaging 2.6. Khan and Ross found for a sample of 14 industrial countries that cyclical income elasticity averaged about 40 percent higher than trend income elasticity. The authors' results suggest that the two elasticities may differ by an even larger factor for developing countries.

Relative prices generally are more important in determining import demand in Latin America and Asian-Pacific countries in Clavijo and Faini's sample, but seem to have little effect in the African and (perhaps surprisingly) Mediterranean countries. In countries for which both cyclical and long-term income elasticities are significantly different from zero, relative price coefficients are also significantly different than in countries for which income parameters are not significantly different from zero. Including the cyclical component in the model seems to improve not only the fit but also the performance of the equation.

This paper is a product of the Trade Policy Division, Country Economics Department. Please contact Karla Cabana, room N8-065, extension 61539.

198. Equity in Unequal Deductions: Implications of Income Tax Rules in Ghana and Nigeria

Chad Leechor and Robert Warner

In many African countries, the size of a taxpayer's personal deduction increases with his income. Does this rule give the rich more of a tax break than the poor? Is a standard (fixed) deduction needed to allow for progressivity? The answers may surprise you.

At first glance, allowing the personal deduction on income tax to increase as the taxpayer's income increases appears to give larger tax breaks to the rich than to the poor. On closer examination, this notion turns out to be false. As the authors of this paper learned, each tax system with "income-dependent tax deductions" (IDTDs) is fully equivalent to a particular conventional progressive tax system with standard deductions.

Consider a given conventional tax schedule that has standard deductions and progressive tax rates. Suppose that you add a new rule to this system that provides an additional deduction equal to 10 percent of the taxpayer's income. This single reform measure has the same effect as a "liberalization" package consisting of (a) an increase of about 10 percent in standard deductions, (b) an enlargement of about 10 percent in all tax brackets, and (c) a reduction of about 10 percent on all marginal tax rates. The full equivalence of the two options may not be obvious — it was not to the authors.

In other words, a tax system with IDTDs is not less equitable than a conventional system with standard deductions. They are equivalent. The liberalization package in the example is typical in 1980s' tax reforms yet equity has not emerged as an issue. An equivalent tax reform option consisting of an IDTD rule, therefore, should not be a cause for concern. Substituting an IDTD rule for a liberalization package would leave the tax system effectively unchanged, although the two sets of tax rules appear to be different.

Should a country contemplating liberalization of the tax schedules simply adopt an IDTD? The answer is not easy. An IDTD is administratively simple, but its logic is not immediately transparent. It could be seen as inequitable, and it could be misused. The fixed percentage deduction could be relaxed, resulting in an unrestricted deduction. The IDTD could also be confined to one category of taxpayers, resulting in a true inequity — as with discrimination against the self-employed in some countries.

These caveats do not necessarily justify replacing an existing IDTD with an equivalent liberalization package. A taxpaying public long accustomed to income-determined allowances may vigorously oppose such a change. Even in an imperfect IDTD system, it may be strategic-ally preferable to correct the aberrations rather than eliminate the IDTDs and risk a tax revolt.

One implication for comparative tax research is that the tax schedule of a country that uses IDTDs should not be compared directly with a conventional tax schedule in another country. Existing cross-country work on tax deductions and marginal tax rates generally fails to recognize that IDTDs invalidate a straightforward comparison. To make the two systems comparable, a transformation like the one suggested in the paper is needed.

This paper is a product of thePublic Economics Division, Country Economics Department and the Country Operations Division, Western Africa Department. Please contact Ann Bhalla, room N10-061, extension 60359.

199. Private Sector Assessment: A Pilot Exercise in Ghana

Samuel Paul

Reform of Ghana's macropolicies has helped to create a more favorable business environment and a "level playing field" for the private sector. At this point, instead of further refining its policies, Ghana should begin strengthening the institutions to implement them, and improving the channels of communication between government and the private sector.

This private sector assessment of Ghana — confined to Ghana's industry sector because of limited data — concludes, among other things, that:

Reform of Ghana's macropolicy environment has helped to create a more favorable business environment and a "level playing field" for the private sector. Reforms have reduced entry barriers (except in labor) and encouraged greater competition in the industry sector. Much remains to be done, but important steps have been taken toward improving communications and transport infrastructure.

Important institutional constraints remain, however. At this juncture, instead of further refining its policies, Ghana should establish a priority of strengthening its institutions and its capacity to support long-term private sector investment and production. Institutions to provide support services to the private sector — including credit, technology acquisition, investment promotion, adaptive research, training, and quality control — are weak in Ghana, and the policies to strengthen them must be thought through.

In particular, Ghana needs new institutional mechanisms for mobilizing resources and for improving the availability and allocation of credit. The current credit squeeze has favored short-term trading operations over long-term investment — and prospects for genuine long-term investment seem bleak. The lack of credit for new, small- and medium-scale entrepreneurs is the single most "felt" constraint on Ghana's private sector.

Incentives for private investment have been strengthened but the investment approval process must be speeded up and prior laws and regulations must be revised and brought in line with the new code. The case for reducing the Investment Code's bias toward capital-intensive investments, for example, should be reviewed.

The government must learn to communicate new policies and decisions fully to potential investors — whose confidence in Ghana's stability and policies remains a problem, partly because of inadequate dialogue between the private sector and the government.

Donors should focus more on core support and on the long-term actions needed for institutions to grow and survive.

Several steps go into a full-scale private sector assessment:

- An overview of the nature and scope of the country's private sector.
- A review of the policies, laws, and regulations affecting the sector(s) to be assessed — and of the capacity of the public institutions responsible for planning and implementing them.
- An assessment of the operating legal system and practices that affect the private sector (this was omitted for this assessment).
- A review of the private sector's common service institutions and of its channels for dialogue with the government.

This paper is a product of the Public Sector Management and Private Sector Development Division, Country Economics Department. Please contact Ernestina Madrona, room N9-061, extension 61712.

200. Women and Development: Objectives, Frameworks, and Policy Interventions

T. Paul Schultz

The private and social returns are high on investments to improve women's economic productivity — particularly education. Where women receive less education than men, efforts to redress that imbalance deserve priority. Measures to open women's access to information, technology, productive resources, and credit should also be tested far more extensively.

The contribution of women to an economy is in principle no different from that of men. But in practice, the problems of valuation, measurement, and policy inference are more complex — and the implications for policy and programs may be more controversial and culturally sensitive

Reviewing and integrating several lines of economic research on how women affect economic and social development, Schultz concludes that:

- Private returns to investment that enhance women's market productivity are high, notably in primary and secondary education, especially in regions where women now receive less education then men.
- These investments shift the allocation of women's time toward market work and away from home-based work.
- These investments benefit the health and nutrition of the women's children and immediate family members.
- These investments reduce desired fertility and increase women's ability to obtain and use family planning services more effectively.
- These investments make women more efficient managers of family resources of land, fuelwood, water, and food.
- Family planning and family health "outreach" programs especially help women, because women's mobility is particularly constrained by culture and the practical realities of childbearing and childcare.
- For similar reasons, extension or similar "outreach" activities can increase the productivity of women in home-based production, including agriculture and the provision and use of household water.
- Extension or outreach programs can correct factor market distortions, provide women with more equal access to agricultural and household technologies, and expand the effective supply of credit where women produce for market.

To give us more firm evidence than we have of how public policies affect women's productivity or family consumption patterns, Schultz recommends pilot programs to:

- Increase school enrollment and graduation rates for girls.
- Assess the effect of equalizing access to agricultural extension services by male and female farmers in Africa, South East Asia, and Latin America.
- Explore alternative configurations of child and maternal health programs, varying the mix of staff by level and gender.
- Evaluate program innovations in the delivery of credit, such as the Grameen Bank in Bangladesh.

All of these pilot programs should be designed to monitor the choices families make that affect whether they produce healthy and educated sons and daughters.

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